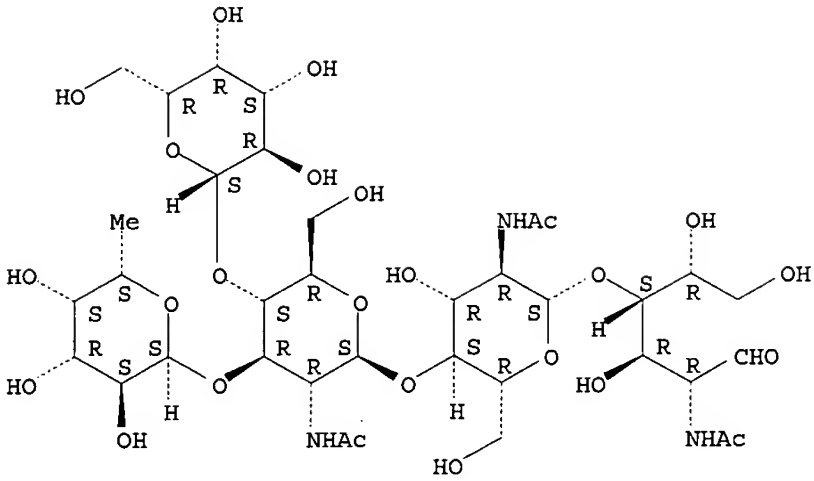
L10 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:150793 CAPLUS
DOCUMENT NUMBER: 130:348917
TITLE: In vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI
AUTHOR(S): Nimtz, Manfred; Grabenhorst, Eckart; Gambert, Ulrike; Costa, Julia; Wray, Victor; Morr, Michael; Thiem, Joachim; Conradt, Harald S.
CORPORATE SOURCE: Gesellschaft fur Biotechnologische Forschung, Braunschweig, 38124, Germany
SOURCE: Glycoconjugate Journal (1998), 15(9), 873-883
CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Transgalactosylation of chitobiose and chitotriose employing .beta.-galactosidase from bovine testes yielded mixts. with .beta.1-3 linked galactose (type I) and .beta.1-4 linked galactose (type II) in a final ratio of 1:1 for the tri- and 1:1.4 for the tetrasaccharide. After 24 h incubations of the two purified oligosaccharide mixts. with large amts. (20-fold increase compared with std. conditions) of human .alpha.1, 3/4-fucosyltransferase III (FucT III), the type I tri-/**tetrasaccharides** were completely converted to the Lewisa structure, whereas approx. 10% fucosylation of the type II isomers to the Lewisx oligosaccharides was obsd. in long-term incubations. Employing large amts. of human .alpha.1, 3-fucosyltransferase VI (FucT VI), the type I trisaccharide substrate was exclusively fucosylated at the proximal 0-4 substituted N-acetylglucosamine (GlcNAc) (20%) whereas almost all of the type II isomers was converted to the corresponding Lewisx product. 45% Of the type I tetrasaccharide was fucosylated at the second GlcNAc solely by FucT VI. The type II isomer was almost completely .alpha.1-3 fucosylated to yield the Lewisx deriv. with traces of a structure that contained an addnl. fucose at the reducing GlcNAc. The results obtained in the present study employing high amts. of enzyme confirmed our previous results that FucT III acts preponderantly as a .alpha.1-4 fucosyltransferase onto GlcNAc in vitro. Human FucT VI attaches fucose exclusively in an .alpha.1-3 linkage to 4-substituted GlcNAc in vitro and does not modify any 3-substituted GlcNAc to yield Lewisa oligosaccharides. With 8-methoxycarbonyl-octyl glycoside acceptors used under std. conditions, FucT III acts exclusively on the type I and FucT VI only on the type II deriv. With lacto-N-tetraose, lacto-N-fucopentraose I, or LS-tetrasaccharide as substrates, FucT III modified the 3-substituted GlcNAc and the reducing glucose; FucT VI recognized only lacto-N-neotetraose as a substrate.

IT **225089-62-3**
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(in vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI)

RN 225089-62-3 CAPLUS
CN D-Glucose, 0-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L10 1 S L7 AND TETRASACCHARIDES

=> s l7 and pentasaccharides
365 PENTASACCHARIDES
L11 0 L7 AND PENTASACCHARIDES

=> s l7 and pentasaccharide
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365 PENTASACCHARIDES
1603 PENTASACCHARIDE
(PENTASACCHARIDE OR PENTASACCHARIDES)
L12 6 L7 AND PENTASACCHARIDE

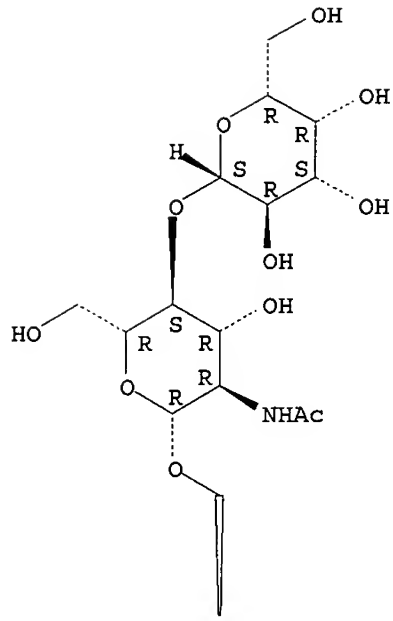
=> d l12 1-6 ibib abs hitstr

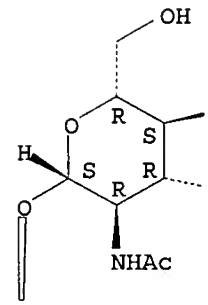
L12 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:390036 CAPLUS
DOCUMENT NUMBER: 137:32022
TITLE: Functional analysis of the carbohydrate recognition domains and a linker peptide of galectin-9 as to eosinophil chemoattractant activity
AUTHOR(S): Sato, Miki; Nishi, Nozomu; Shoji, Hiroki; Seki, Masako; Hashidate, Tomomi; Hirabayashi, Jun; Kasai, Ken-Ichi; Hata, Yuiro; Suzuki, Shigehiko; Hirashima,

Mitsuomi; Nakamura, Takanori
CORPORATE SOURCE: Department of Endocrinology, Plastic and Reconstructive Surgery, Kagawa Medical University, Kagawa, 761-0793, Japan
SOURCE: Glycobiology (2002), 12(3), 191-197
CODEN: GLYCE3; ISSN: 0959-6658
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Human galectin-9 is a .beta.-galactoside-binding protein consisting of two carbohydrate recognition domains (CRDs) and a linker peptide. We have shown that galectin-9 represents a novel class of eosinophil chemoattractants (ECAs) produced by activated T cells. A previous study demonstrated that the carbohydrate binding activity of galectin-9 is indispensable for eosinophil chemoattraction and that the N- and C-terminal CRDs exhibit comparable ECA activity, which is substantially lower than that of full-length galectin-9. In this study, we investigated the roles of the two CRDs in ECA activity in conjunction with the sugar-binding properties of the CRDs. In addn., to address the significance of the linker peptide structure, we compare the three isoforms of galectin-9, which only differ in the linker peptide region, in terms of ECA activity. Recombinant proteins consisting of two N-terminal CRDs (galectin-9NN), two C-terminal CRDs (galectin-9CC), and three isoforms of galectin-9 (galectin-9S, -9M, and -9L) were generated. All the recombinant proteins had hemagglutination activity comparable to that of the predominant wild-type galectin-9 (galectin-9M). Galectin-9NN and galectin-9CC induced eosinophil chemotaxis in a manner indistinguishable from the case of galectin-9M. Although the isoform of galectin-9 with the longest linker peptide, galectin-9L, exhibited limited soly., the three isoforms showed comparable ECA activity over the concn. range tested. The interactions between N- and C-terminal CRDs and glycoprotein glycans and glycolipid glycans were examd. using frontal affinity chromatog. Both CRDs exhibited high affinity for branched complex type sugar chain, esp. for tri- and tetraantennary N-linked glycans with N-acetyllactosamine units, and the oligosaccharides inhibited the ECA activity at low concns. These results suggest that the N- and C-terminal CRDs of galectin-9 interact with the same or a closely related ligand on the eosinophil membrane when acting as an ECA and that ECA activity does not depend on a specific structure of the linker peptide.
IT **107741-95-7**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(carbohydrate recognition domains of galectin-9 in relation to glycan recognition and eosinophil chemoattractant activity)
RN 107741-95-7 CAPLUS
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.6)]-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A





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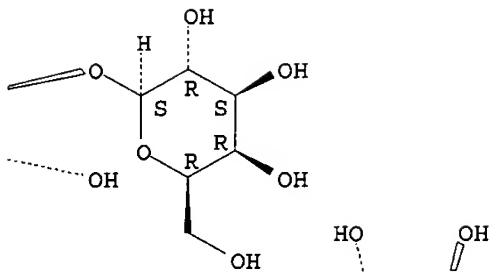

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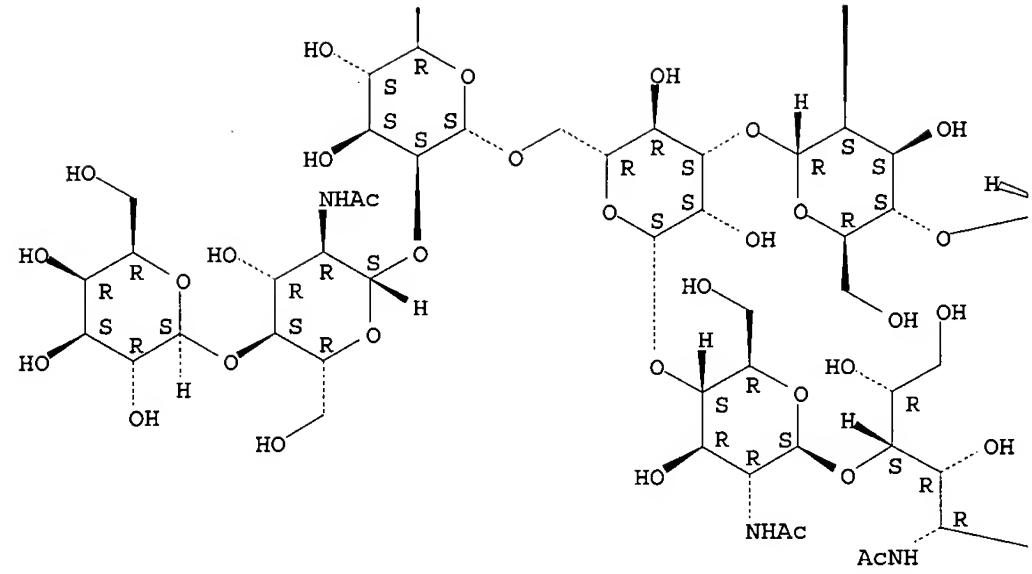

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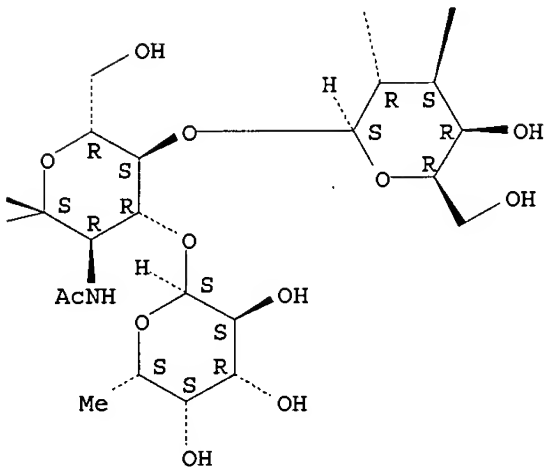


CHO

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:111066 CAPLUS
DOCUMENT NUMBER: 134:349552
TITLE: Sugar binding properties of the two lectin domains of the tandem repeat-type galectin LEC-1 (N32) of Caenorhabditis elegans. Detailed analysis by an improved frontal affinity chromatography method
AUTHOR(S): Arata, Yoichiro; Hirabayashi, Jun; Kasai, Ken-Ichi
CORPORATE SOURCE: Department of Biological Chemistry, Faculty of Pharmaceutical Sciences, Teikyo University, Kanagawa, 199-0195, Japan

SOURCE: Journal of Biological Chemistry (2001), 276(5), 3068-3077
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The 32-kDa galectin (LEC-1 or N32) of the nematode Caenorhabditis elegans is the first example of a tandem repeat-type galectin and is composed of two domains, each of which is homologous to typical vertebrate 14-kDa-type galectins. To elucidate the biol. meaning of this unique structure contg. two probable sugar binding sites in one mol., we analyzed in detail the sugar binding properties of the two domains by using a newly improved frontal affinity chromatog. system. The whole mol. (LEC-1), the N-terminal lectin domain (Nh), and the C-terminal lectin domain (Ch) were expressed in Escherichia coli, purified, and immobilized on HiTrap gel agarose columns, and the extent of retardation of various sugars by the columns was measured. To raise the sensitivity of the system, we used 35 different fluorescence-labeled oligosaccharides (pyridylaminated (PA) sugars). All immobilized proteins showed affinity for N-acetyllactosamine-contg. N-linked complex-type sugar chains, and the binding was stronger for more branched sugars. Ch showed 2-5-fold stronger binding toward all complex-type sugars compared with Nh. Both Nh and Ch preferred Gal.beta.1-3GlcNAc to Gal.beta.1-4GlcNAc. Because the Fuc.alpha.1-2Gal.beta.1-3GlcNAc (H antigen) structure was found to interact with all immobilized protein columns significantly, the Kd value of **pentasaccharide** Fuc.alpha.1-2Gal.beta.1-3GlcNAc.beta.1-3Gal.beta.1-4Glc-PA for each column was detd. by analyzing the concn. dependence. Obtained values for immobilized LEC-1, Nh, and Ch were 6.0 .times. 10-5, 1.3 .times. 10-4, and 6.5 .times. 10-5 M, resp. The most significant difference between Nh and Ch was in their affinity for GalNAc.alpha.1-3(Fuc.alpha.1-2)Gal.beta.1-3GlcNAc.beta.1-3Gal.beta.1-4Glc-PA, which contains the blood group A antigen; the Kd value for immobilized Nh was 4.8 .times. 10-5 M, and that for Ch was 8.1 .times. 10-4 M. The present results clearly indicate that the two sugar binding sites of LEC-1 have different sugar binding properties.

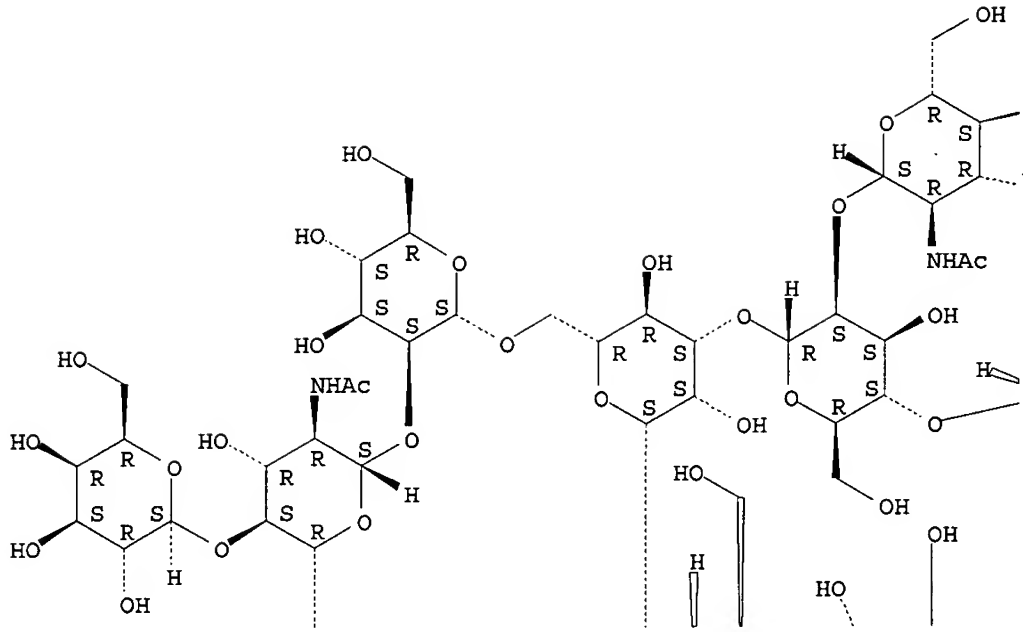
IT **107741-94-6 107741-95-7**
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(binding; sugar binding properties of the two lectin domains of the tandem repeat-type galectin LEC-1 (N32) of Caenorhabditis elegans)

RN 107741-94-6 CAPLUS

CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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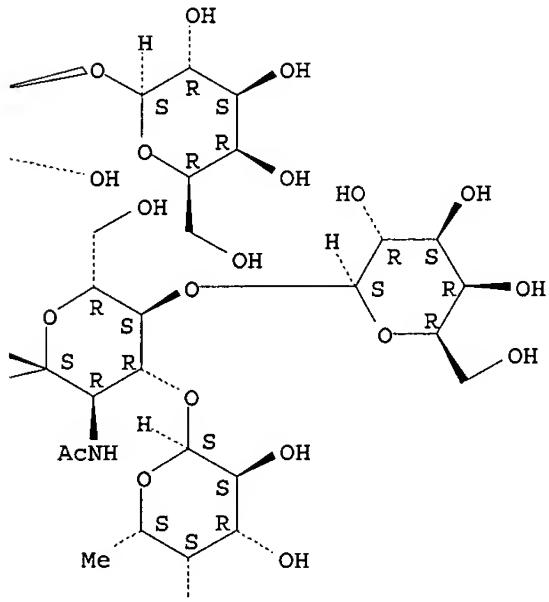
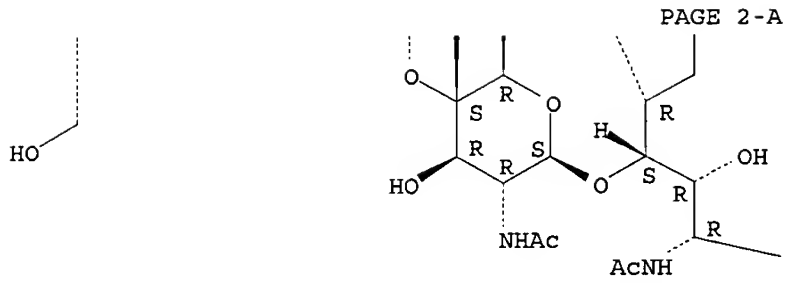




PAGE 2-B

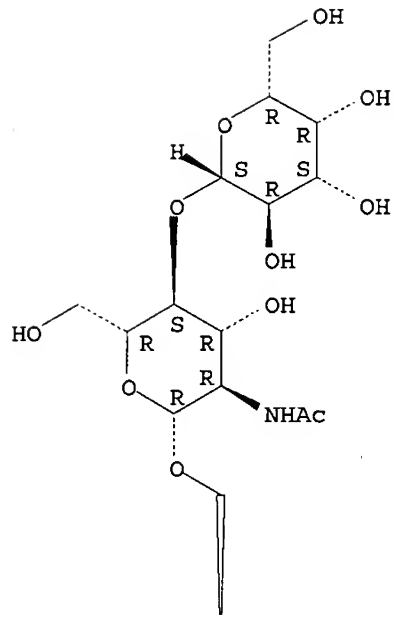
CHO

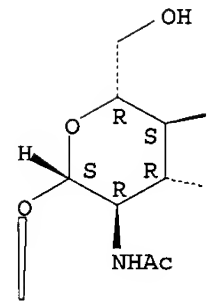
RN 107741-95-7 CAPLUS

CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.6)]-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A





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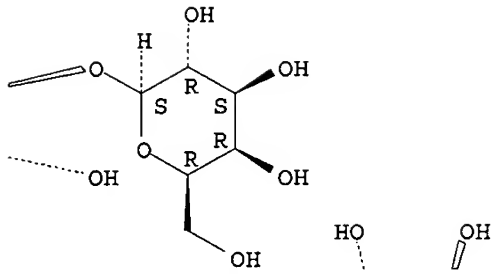

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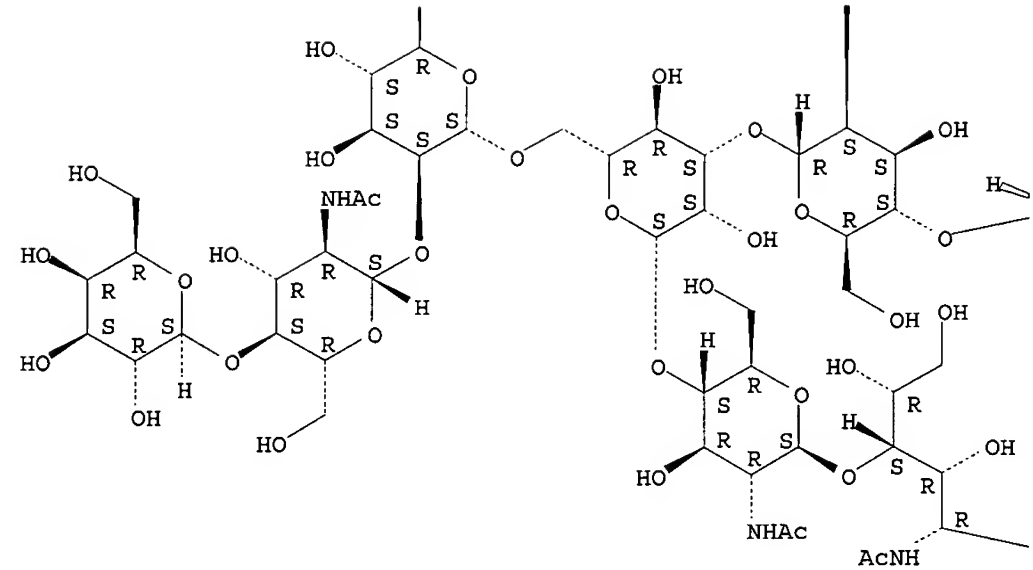

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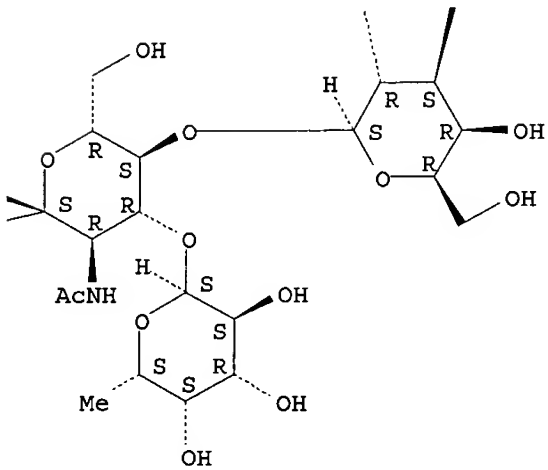

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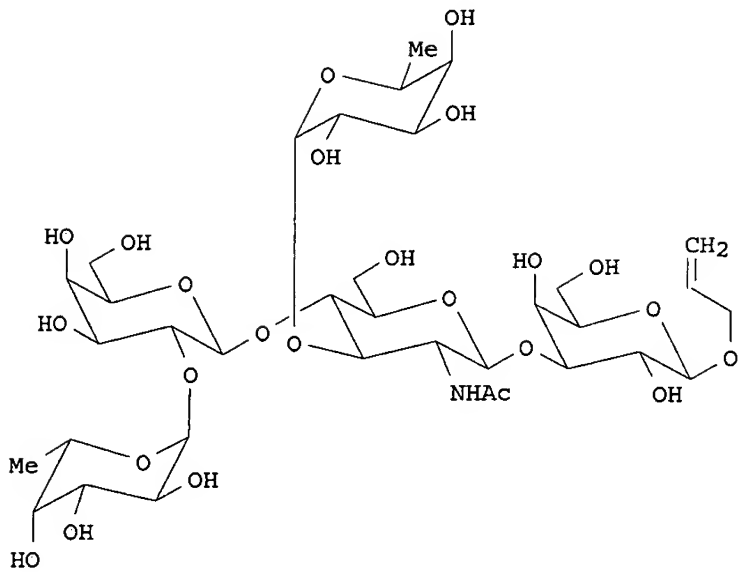
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:62331 CAPLUS
DOCUMENT NUMBER: 122:31794
TITLE: Highly convergent synthesis of blood group determinant Lewisy in conjugate-forming form
AUTHOR(S): Behar, Victor; Danishefsky, Samuel J.
CORPORATE SOURCE: Department of Chemistry, Columbia University, New York, NY, 10027, USA
SOURCE: Angewandte Chemie (1994), 106(14), 1536-8 (See also Angew. Chem., Int. Ed. Engl., 1994, 33(14), 1468-70)
CODEN: ANCEAD; ISSN: 0044-8249

DOCUMENT TYPE: Journal
LANGUAGE: German
GI



I

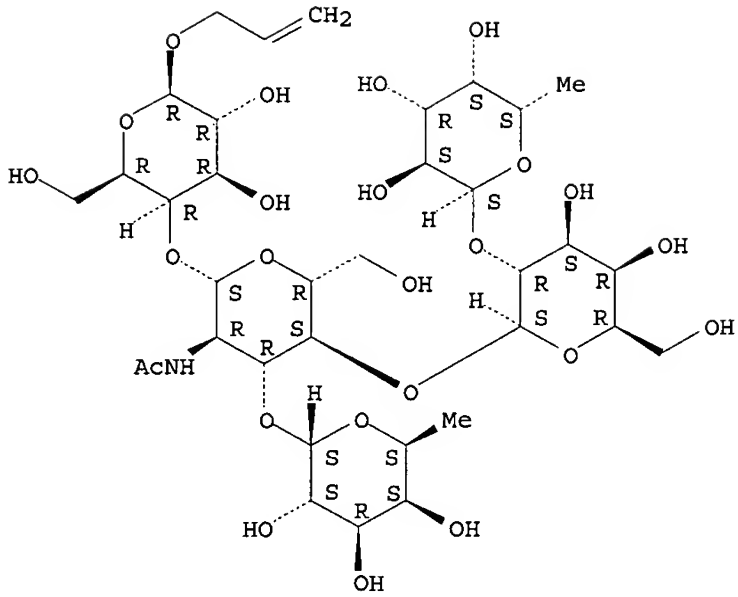
AB The title compd. I was prepd. by using glycals as both glycosyl donors and acceptors. I was oxidized to the aldehyde which bound to bovine serum albumin.

IT **159494-41-4P 159494-43-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of blood group determinant Lewisy using glycals as glycosyl donors and receptors)

RN 159494-41-4 CAPLUS

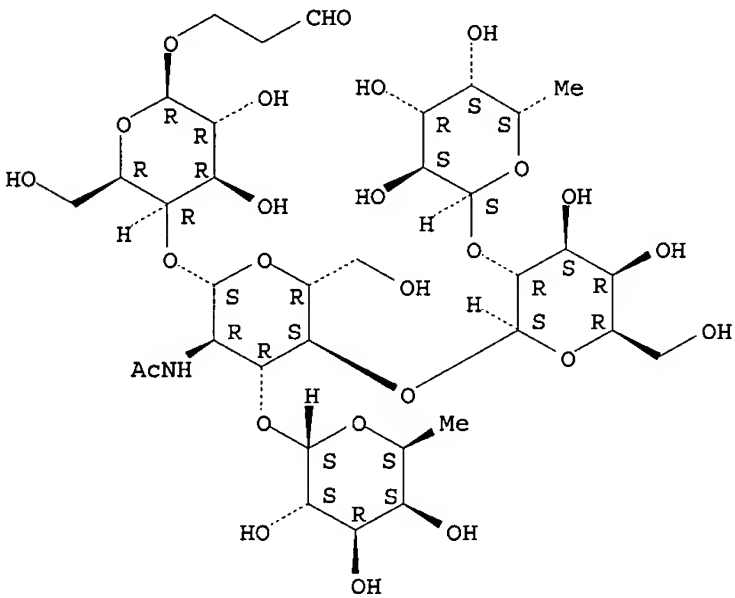
CN .beta.-D-Galactopyranoside, 2-propenyl O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.2)-.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 159494-43-6 CAPLUS
CN Propanal, 3-[[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[O-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.2)-.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-.beta.-D-galactopyranosyl]oxy]- (9CI) (CA INDEX NAME)

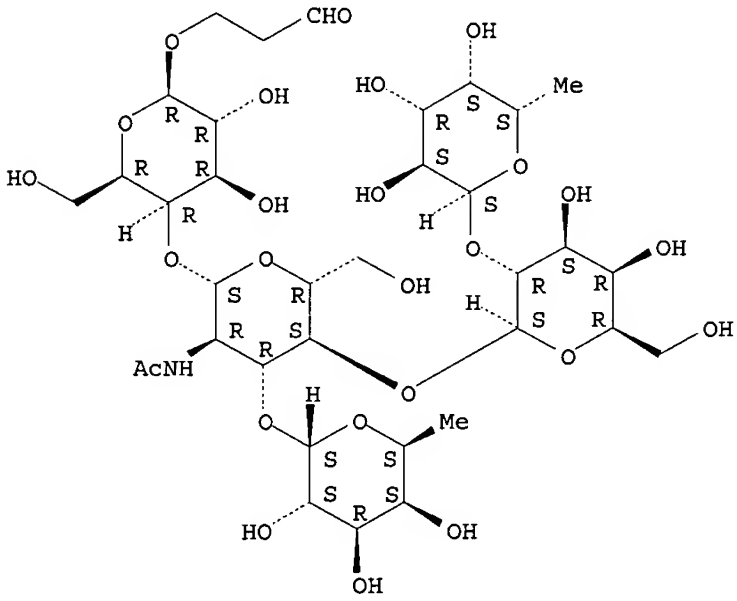
Absolute stereochemistry.



IT **159494-43-6DP**, albumin-bound
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of blood group determinant Lewisy using glycals as glycosyl donors and receptors)
RN 159494-43-6 CAPLUS
CN Propanal, 3-[[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[O-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.2)-.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-

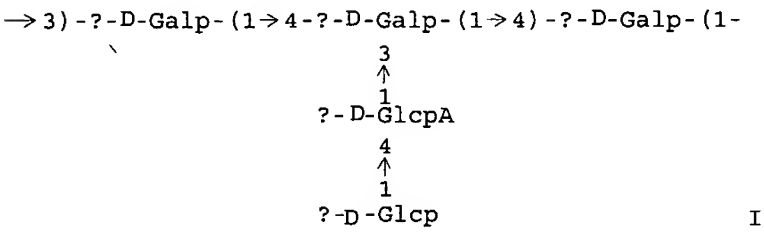
(1.fwdarw.4)-.beta.-D-galactopyranosyl]oxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L12 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1993:81284 CAPLUS
DOCUMENT NUMBER: 118:81284
TITLE: The capsular antigen of Escherichia coli serotype O8:K102:H-
AUTHOR(S): De Bruin, Aletta H.; Parolis, Haralambos; Parolis, Lesley A. S.
CORPORATE SOURCE: Sch. Pharm. Sci., Rhodes Univ., Grahamstown, 6140, S. Afr.
SOURCE: Carbohydrate Research (1992), 235, 199-209
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB The structure of the capsular antigen of E. coli O8:K102:H- was investigated by methylation anal., .beta.-elimination of the methylated polysaccharide, lithium-ethylenediamine-mediated degrdn., and by 1D and 2D 1H and 13C NMR spectroscopy of the lithium-degraded and native polysaccharides. The capsular antigen was shown to have the branched **pentasaccharide** repeating unit I.

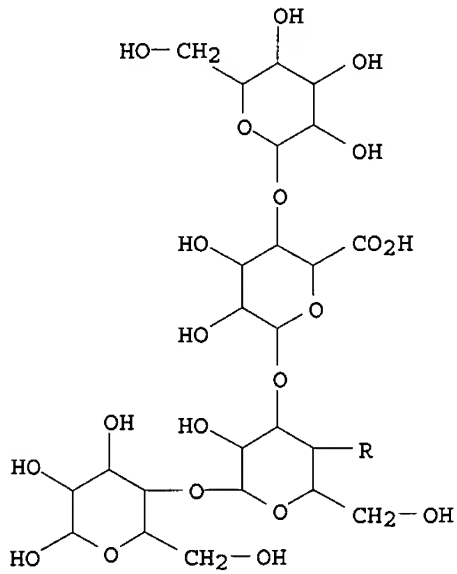
IT **145602-94-4**
RL: RCT (Reactant); RACT (Reactant or reagent)

(repeating unit of capsular antigen of Escherichia coli serotype O8:K102:H-, mol.structure of)

RN 145602-94-4 CAPLUS

CN .beta.-D-Galactopyranose, O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-[O-.alpha.-D-glucopyranosyl-(1.fwdarw.4)-.beta.-D-glucopyranuronosyl-(1.fwdarw.3)]-O-.alpha.-D-galactopyranosyl-(1.fwdarw.4)- (9CI) (CA INDEX NAME)

PAGE 1-A



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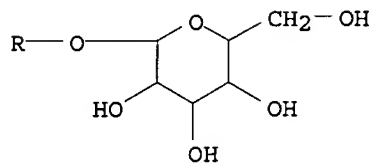


L12 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1989:37934 CAPLUS

DOCUMENT NUMBER: 110:37934

TITLE: Goat milk oligosaccharides: purification and characterization by HPLC and high-field proton NMR spectroscopy

AUTHOR(S): Chaturvedi, Prasoon; Sharma, Chandra B.

CORPORATE SOURCE: Dep. Biosci. Biotechnol., Univ. Roorkee, Roorkee, India

SOURCE: Biochimica et Biophysica Acta (1988), 967(1), 115-21
CODEN: BBACAQ; ISSN: 0006-3002

DOCUMENT TYPE: Journal

LANGUAGE: English

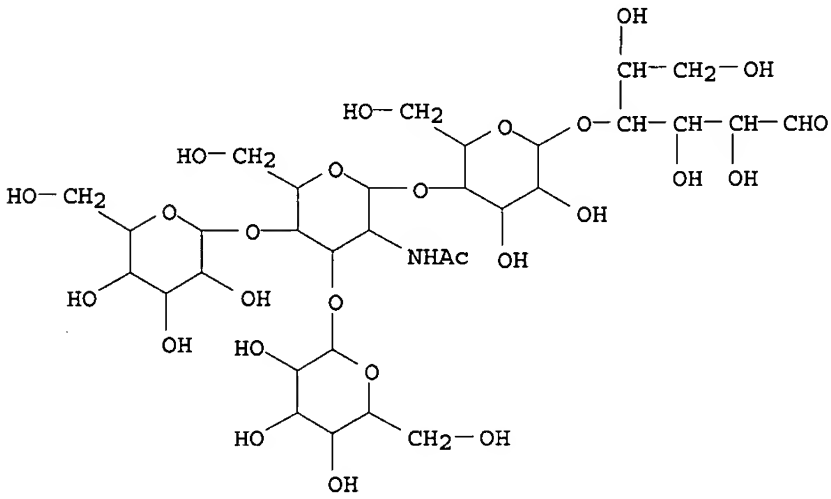
AB Three oligosaccharides were isolated from goat milk using Bio-Gel P-4 and reverse-phase C-18 HPLC and were characterized by high-field 1H-NMR spectroscopy as a trisaccharide, GlcNAc(.beta.1-6)Gal(.beta.1-4)Glc, a tetrasaccharide, Gal(.beta.1-4)GlcNAc(.beta.1-6)Gal(.beta.1-4)Glc, and a

pentasaccharide, Gal(.beta.1-3) [Gal(.beta.1-4)] GlcNAc(.beta.1-3)Gal(.beta.1-4)Glc.

IT **118267-84-8**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of goat milk)

RN 118267-84-8 CAPLUS

CN D-Glucose, O-.beta.-D-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-(9CI) (CA INDEX NAME)



L12 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1987:435865 CAPLUS

DOCUMENT NUMBER: 107:35865

TITLE: Carbohydrate binding properties of complex-type oligosaccharides on immobilized Datura stramonium lectin

AUTHOR(S): Yamashita, Katsuko; Totani, Kazuhide; Ohkura, Takashi; Takasaki, Seiichi; Goldstein, Irwin J.; Kobata, Akira

CORPORATE SOURCE: Sch. Med., Kobe Univ., Kobe, 650, Japan

SOURCE: Journal of Biological Chemistry (1987), 262(4), 1602-7
CODEN: JBCHA3; ISSN: 0021-9258

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The carbohydrate binding specificity of D. stramonium agglutinin was studied by analyzing the behavior of a variety of complex-type oligosaccharides on a D. stramonium agglutinin-Sepharose column. Oligosaccharides that contain Gal.beta.1.fwdarw.4GlcNAc-.beta.1.fwdarw.4(Gal.beta.1.fwdarw.4GlcNAc.beta.1.fwdarw.2)Man units are retarded in the column so long as the **pentasaccharide** unit is not substituted by other sugars. Oligosaccharides that contain unsubstituted Gal.beta.1.fwdarw.4GlcNAc.beta.1.fwdarw.6(Gal.beta.1.fwdarw.4GlcNAc.beta.1.fwdarw.2)Man groups and those in which there is at least 1 Gal.beta.1.fwdarw.4GlcNAc repeating unit present on an outer chain bind to the column and are eluted with buffer contg. N-acetylglucosamine oligomers. Binding was not affected by the inner core portion of complex oligosaccharides nor by the presence of a bisecting N-acetylglucosamine residue. The column can be used as an effective tool for the anal. of complex-type, asparagine-linked sugar chains.

IT **107691-47-4 107691-48-5 107741-94-6**
107741-95-7

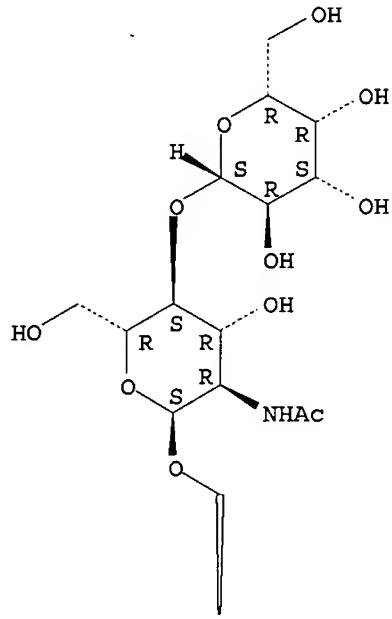
RL: ANST (Analytical study)
(sepn. of, on Datura stramonium agglutinin-Sepharose, binding specificity in relation to)

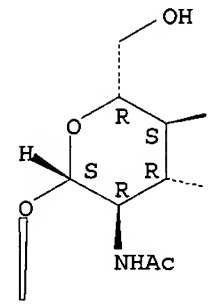
RN 107691-47-4 CAPLUS

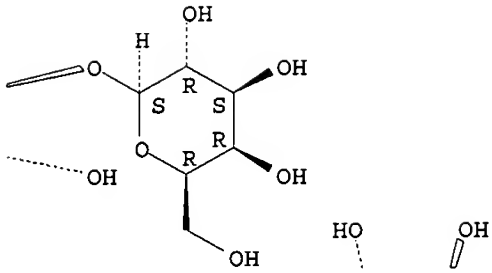
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.6)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.6)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-.alpha.-D-mannopyranosyl-(1.fwdarw.3)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

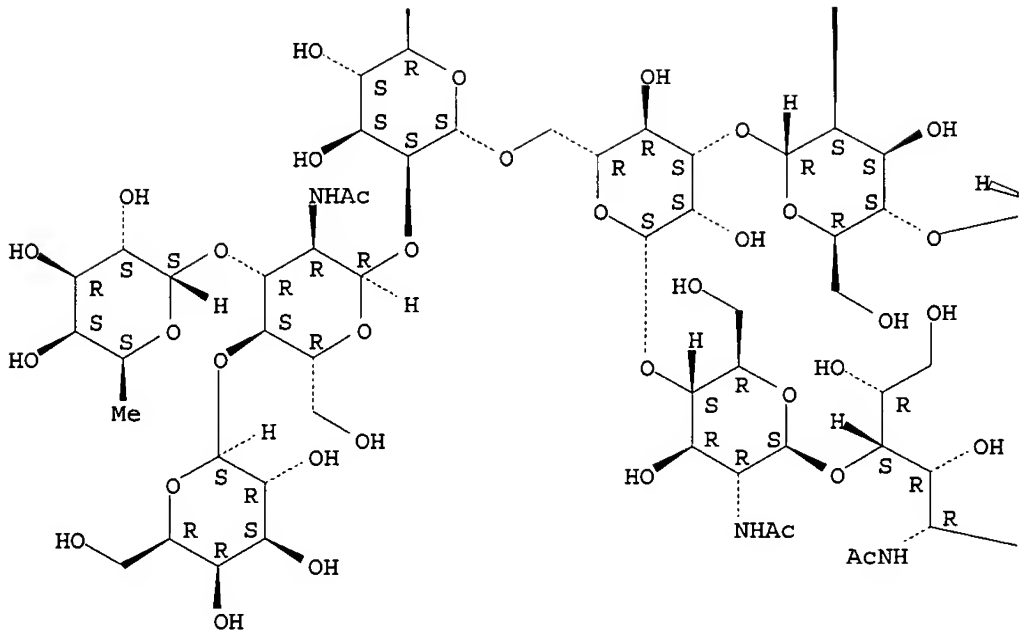
Absolute stereochemistry.

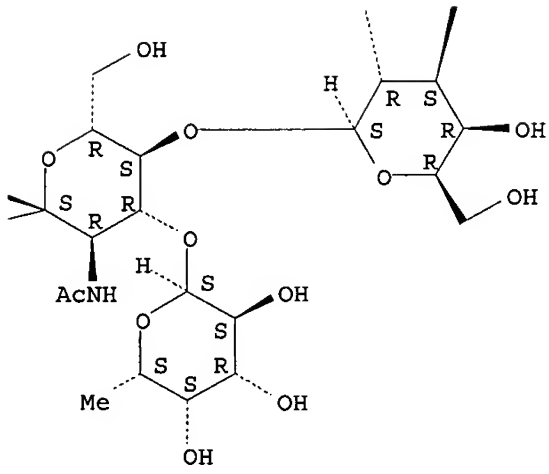
PAGE 1-A











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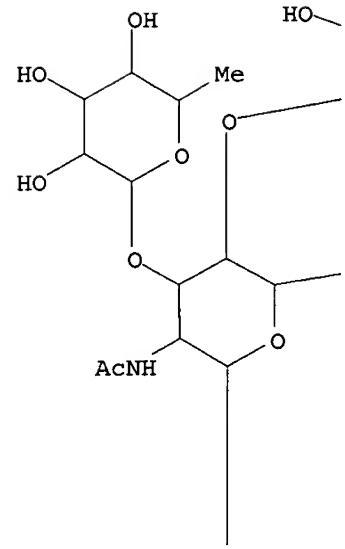
RN 107691-48-5 CAPLUS

CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)]-.alpha.-D-mannopyranosyl-(1.fwdarw.3)]-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.6)]-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.6)]-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

PAGE 1-A



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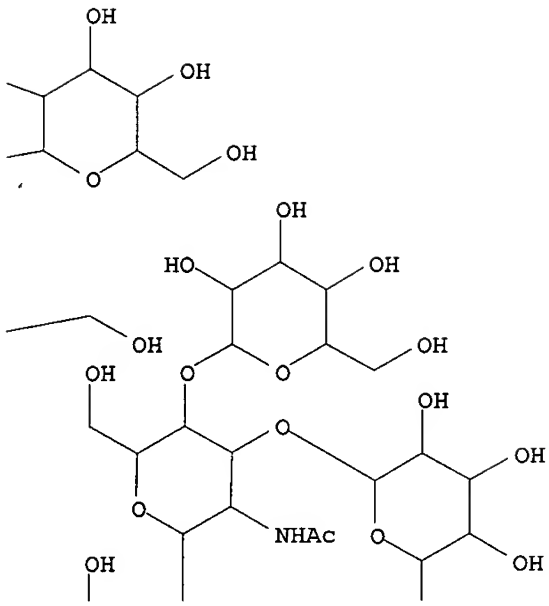

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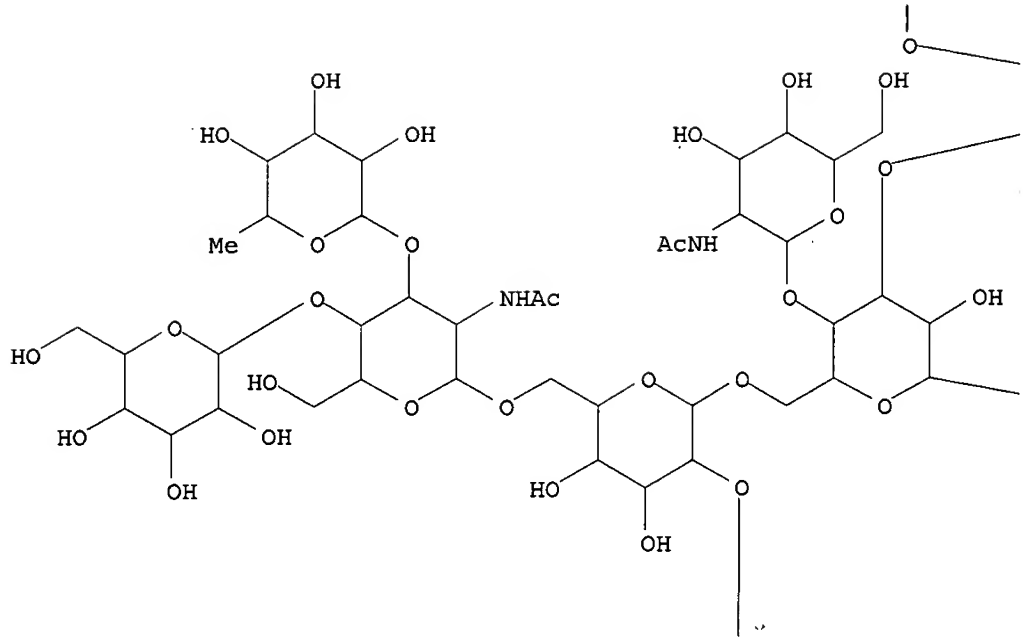

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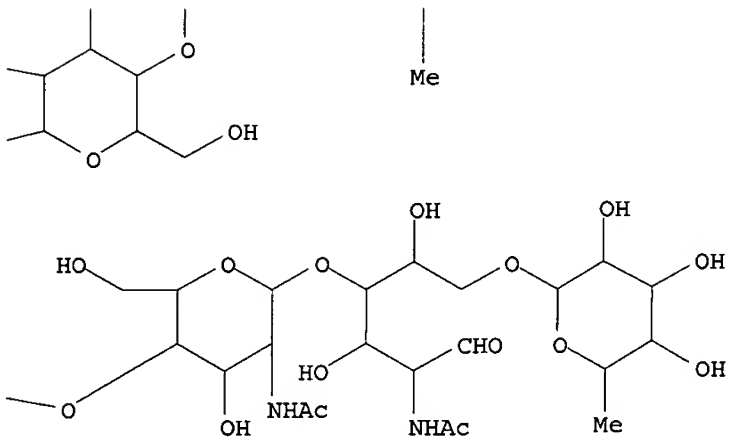

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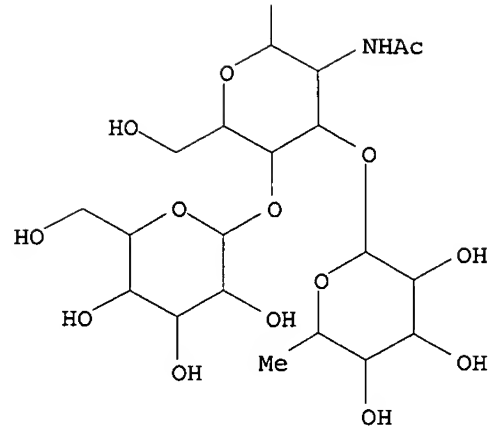
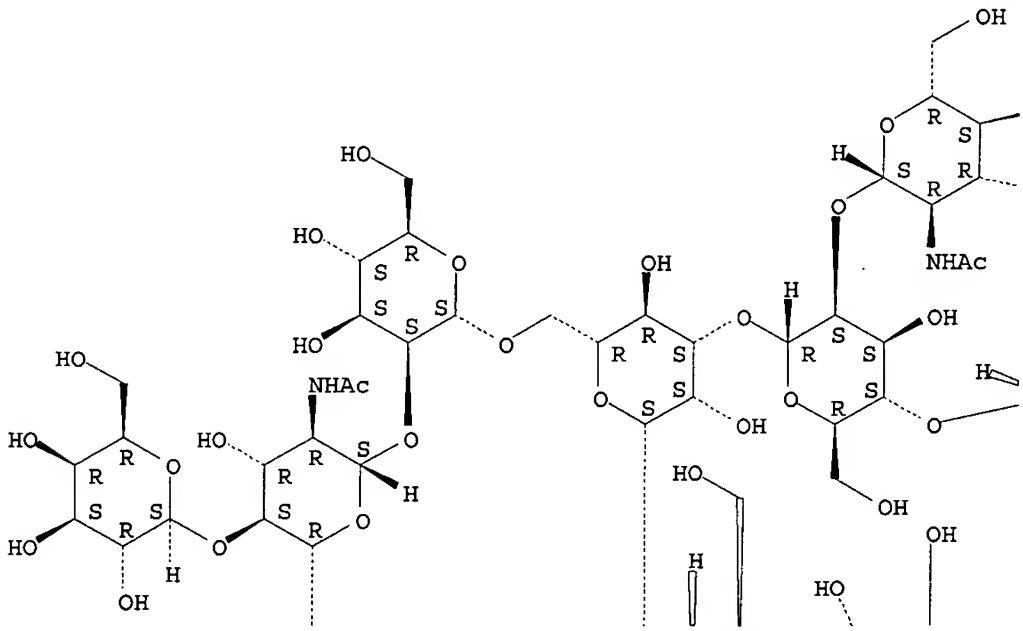


RN 107741-94-6 CAPLUS
CN D-Glucose, 0-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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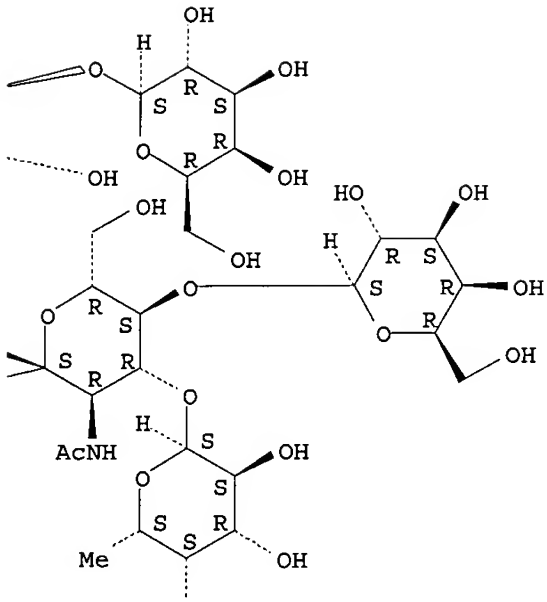

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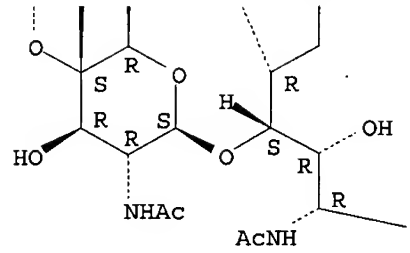

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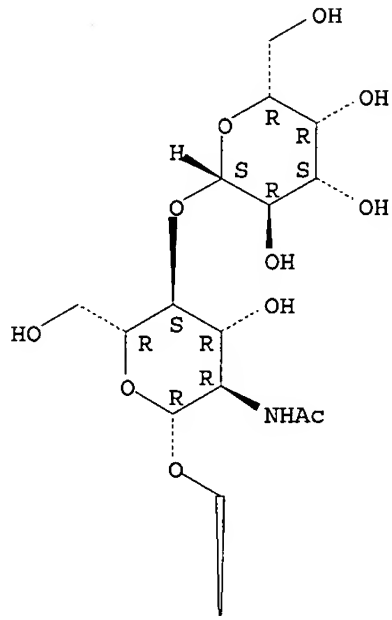
RN 107741-95-7 CAPLUS

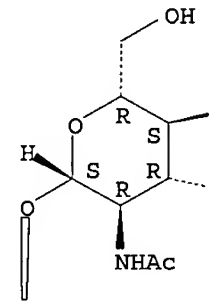
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.6)]-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-

.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A





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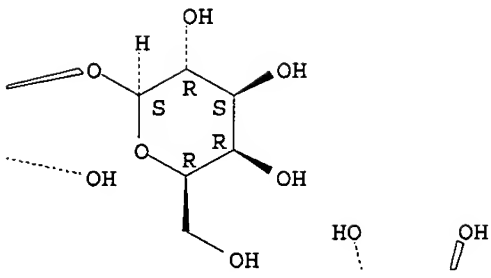

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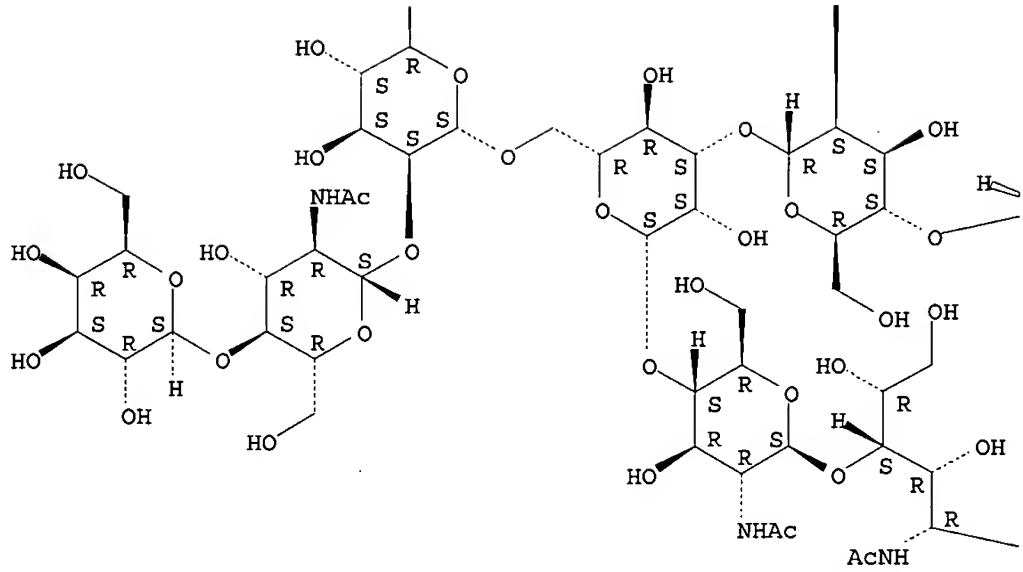

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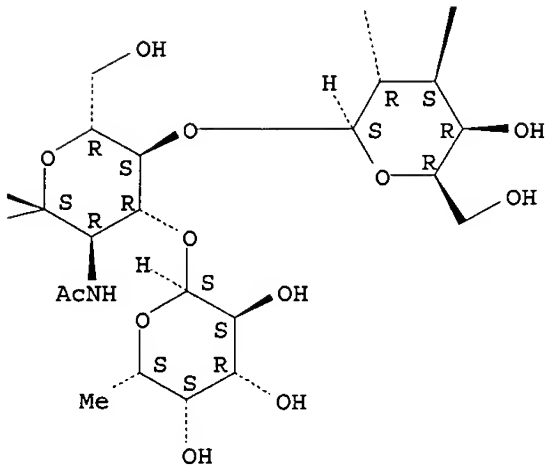

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L4               STRUCTURE UPLOADED
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L11             0 S L7 AND PENTASACCHARIDES
L12             6 S L7 AND PENTASACCHARIDE

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         11708 FUCOSE
            38 FUCOSES
         11723 FUCOSE
                 (FUCOSE OR FUCOSES)
          3111 L-FUCOSE
                 (L(W)FUCOSE)
L13             4 L7 AND L-FUCOSE

=> d l13 1-4 ibib abs hitstr

L13  ANSWER 1 OF 4  CAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:         2001:247347  CAPLUS
DOCUMENT NUMBER:          134:252586
TITLE:                    Preparation of acetamidodeoxy fucosylated
                          oligosaccharides via enzymic glycosidation reaction
INVENTOR(S):              Natunen, Jari
PATENT ASSIGNEE(S):       Carbion Oy, Finland
SOURCE:                   PCT Int. Appl., 43 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
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             HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
             LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, RO, RU, SD,
             SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,
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         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
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OTHER SOURCE(S):          CASREACT 134:252586
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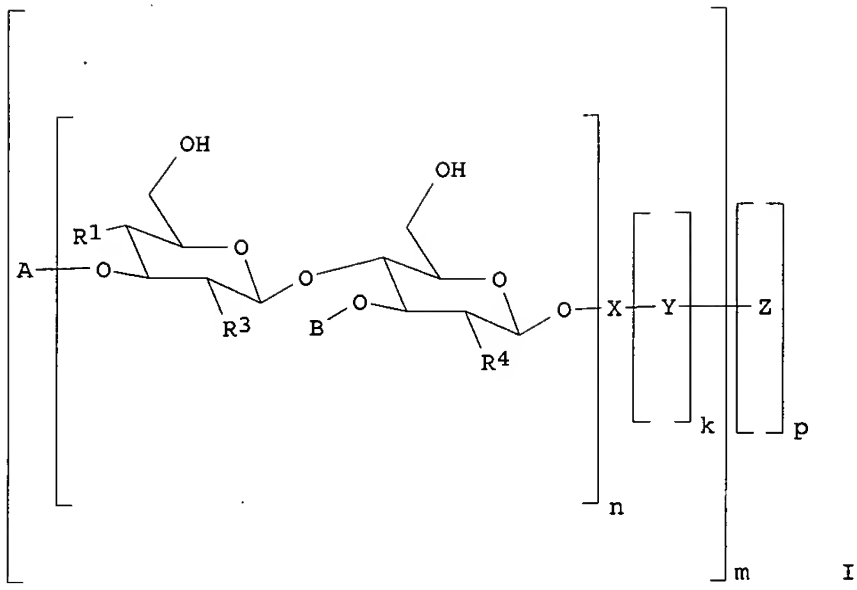


AB The present invention relates to a process for the enzymic glycosidation in prepn. of oligosaccharides or oligosaccharide contg. compds., esp. N-acetyl-chitooligosaccharides having a fucosylated monosaccharide I, wherein A is H or a glycosidically .beta.1-3 linked D-glucopyranosyl residue, R1 is OH, R2 is H and R3 is OH or acylamido, -NH-acyl or R1 is H, R2 is OH and R3 is acetamido -NHCOCH3, B is H, or an .alpha.-L-fucosyl or an .alpha.-L-fucosyl analog, and R4 is OH or acetamido -NHCOCH3, n is 1 to 100, with the proviso that there is always at least one .alpha.-fucosyl or .alpha.-fucosyl analogs group present in the mol., p and k are 0 and m is 1, in which case X is H, an aglycon residue or a monosaccharide selected from the group consisting of Glc, GlcNAc, Gal or GalNAc, optionally in reduced form, or oligosaccharide contg. one or more of said monosaccharide units linked to saccharide X, when n is 1, or p is 1, k is 0 or 1 and 1 < m < 1000, in which case X is a straight bond, or a mono- or oligosaccharide as defined under, Y is a spacer or linking group capable of linking the saccharide or X to Z, and Z is a mono- or polyvalent carrier mol. The invention also relates to novel oligosaccharides or oligosaccharide contg. compds., esp. N-acetyl-chitooligosaccharides, which are fucosylated and optionally covalently bound to a carrier mol. Thus, human fucosyltransferase V-catalyzed glycosidation of N-acetyl-chitotriose and GDP-fucose gave the corresponding fucosylated N-acetyl-chitotriose in 67% yield.

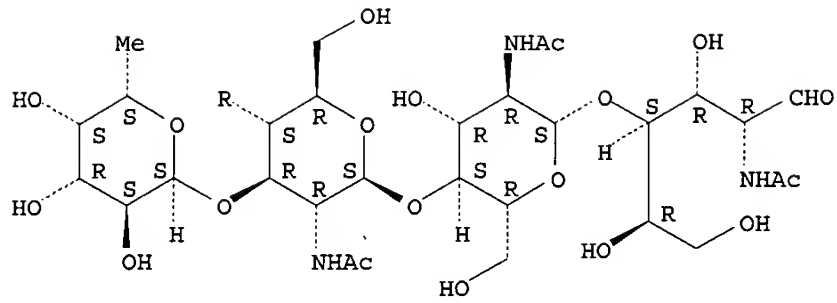
IT **331638-57-4P 331638-62-1P**
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. of acetamidodeoxy fucosylated oligosaccharides via enzymic glycosidation reaction)

RN 331638-57-4 CAPLUS

CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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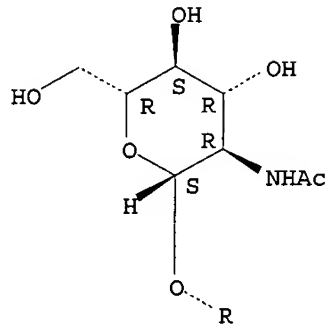
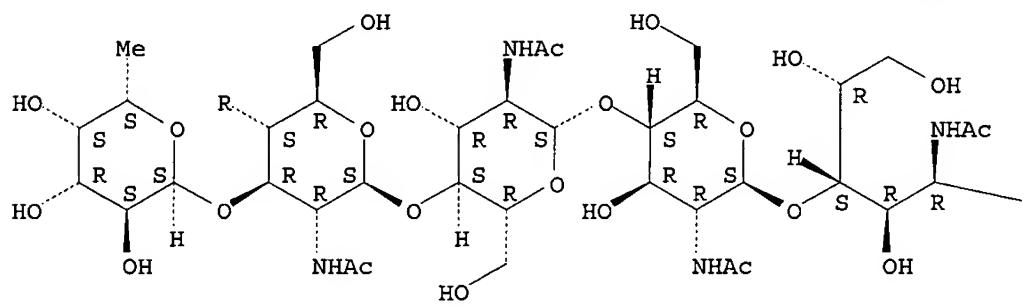


RN 331638-62-1 CAPLUS

CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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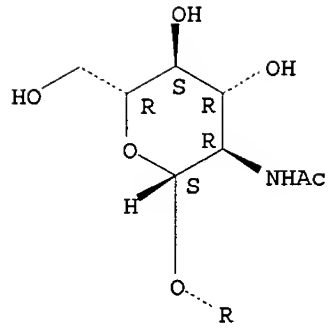
PAGE 2-A



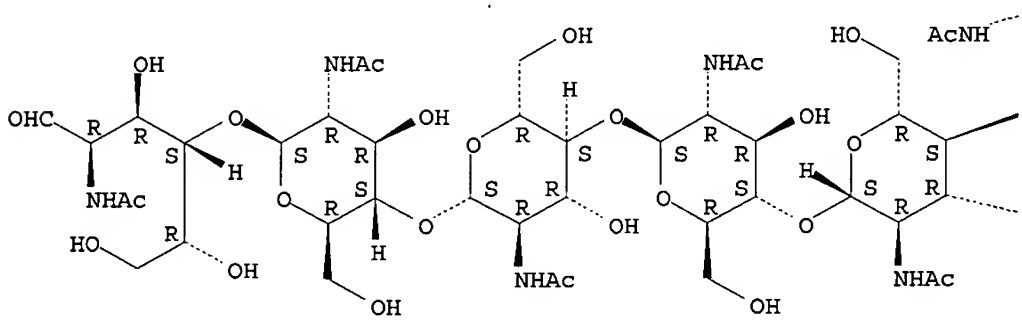
IT **331638-60-9P**
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of acetamidodeoxy fucosylated oligosaccharides via enzymic glycosidation reaction)

RN 331638-60-9 CAPLUS

CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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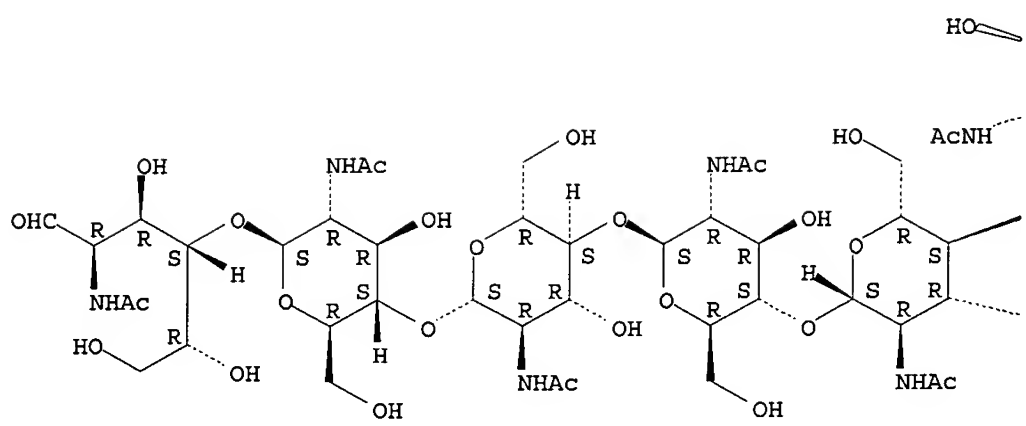

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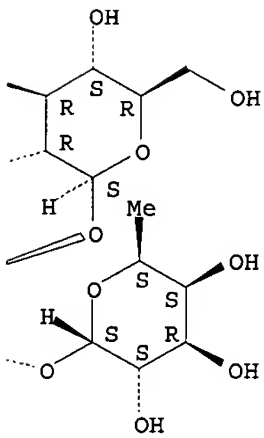


REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:880344 CAPLUS
DOCUMENT NUMBER: 123:310972
TITLE: Tissue targeting of multivalent Lex-terminated N-linked oligosaccharides in mice
AUTHOR(S): Chiu, Ming H.; Thomas, V. Hayden; Stubbs, Hilary J.; Rice, Kevin G.
CORPORATE SOURCE: Coll. Pharmacy, Univ. Michigan, Ann Arbor, MI, 48109-1065, USA
SOURCE: Journal of Biological Chemistry (1995), 270(41), 24024-31
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Bio logy
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The target site for N-linked biantennary and triantennary oligosaccharides

contg. multiple terminal Lex determinants was analyzed in mice. N-linked oligosaccharides contg. a single tert-butoxycarbonyl-tyrosine attached to the reducing end were used as synthons for human milk .alpha.-3/4-fucosyltransferase to prep. multivalent Lex (Gal.beta.1-4[Fuc.alpha.1-3]GlcNAc) terminated tyrosinamide oligosaccharides. The oligosaccharides were radioiodinated and examd. for their pharmacokinetics and biodistribution in mice. The liver was the major target site in mice at 30 min, which accumulated 18% of the dose for Lex biantennary compared with 6% for a nonfucosylated Gal biantennary. By comparison, Lex- and Gal-terminated triantennary accumulated in the liver with a targeting efficiency of 66 and 59%, resp. The liver targeting of Lex biantennary was partially blocked by co-administration with either galactose or **L-fucose** whereas Lex triantennary targeting was only reduced by co-administration with galactose. In contrast to these results in mice, in vivo expts. performed in rats established that both Lex and Gal terminated biantennary target the liver with nearly identical efficiency (6-7%). It is concluded that the asialoglycoprotein receptor in mice preferentially recognize Lex biantennary over Gal biantennary, whereas little or no differentiation exists in rats. Thereby, the mouse asialoglycoprotein receptor apparently possesses addnl. binding pockets that accommodate a fucose residue when presented as Lex.

IT **170128-49-1**

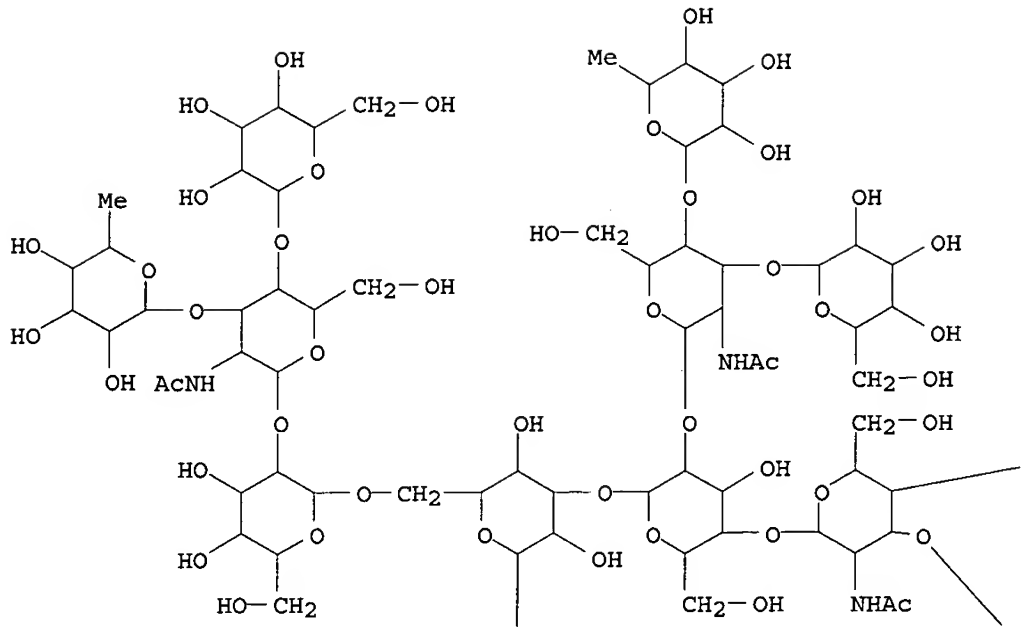
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(tissue targeting of multivalent Lex-terminated N-linked oligosaccharides in mice)

RN 170128-49-1 CAPLUS

CN Carbamic acid, [2-[[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl]amino]-1-[(4-hydroxyphenyl)methyl]-2-oxoethyl]-, 1,1-dimethylethyl ester, (S)- (9CI) (CA INDEX NAME)

PAGE 1-A



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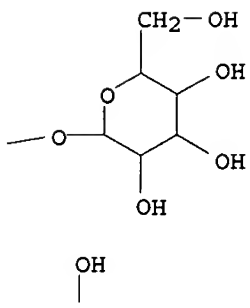

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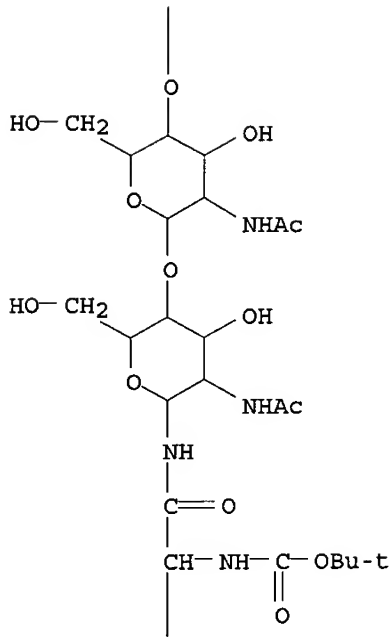

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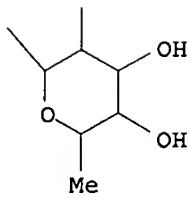

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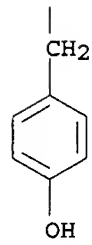


L13 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1990:438749 CAPLUS
DOCUMENT NUMBER: 113:38749
TITLE: Preparation of oligosaccharide-directed antibodies for use in tumor diagnosis and therapy
PATENT ASSIGNEE(S): Reutter, Werner, Fed. Rep. Ger.
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3807594	A1	19890921	DE 1988-3807594	19880308
DE 3807594	C2	19930422		
WO 8908845	A1	19890921	WO 1989-DE146	19890308
W: JP, US				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
EP 406259	A1	19910109	EP 1989-903099	19890308
EP 406259	B1	19930616		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
JP 03503281	T2	19910725	JP 1989-502832	19890308
AT 90793	E	19930715	AT 1989-903099	19890308
US 5625037	A	19970429	US 1993-128264	19930928

PRIORITY APPLN. INFO.:	DE 1988-3807594	19880308
	EP 1989-903099	19890308
	WO 1989-DE146	19890308
	US 1990-556960	19900108

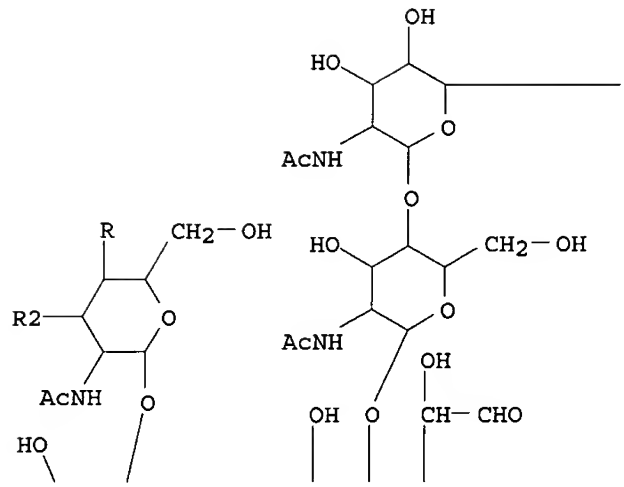
OTHER SOURCE(S): MARPAT 113:38749

AB Oligosaccharide fractions of tumor cell membrane glycoproteins are prepd. by chem. or enzymic hydrolysis of the glycoproteins, made haptenic by conjugation with serum albumin or eldestrin, and used by std. techniques to prep. mono- or polyclonal antibodies. These antibodies can be used in ELISA tests to detect the presence of corresponding antigens on other cells. The antibodies are directed mainly against the N-acetylglucosamine and 1,3- or 1,6-linked mannose units of the antigen.

IT **127981-84-4**
RL: BIOL (Biological study)
(of neoplasm cell membrane, prepn. of antibodies to)

RN 127981-84-4 CAPLUS

CN D-Mannose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.6)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.alpha.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-.alpha.-D-glucopyranosyl-(1.fwdarw.4)]-.alpha.-D-mannopyranosyl-(1.fwdarw.3)]-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.alpha.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-.alpha.-D-glucopyranosyl-(1.fwdarw.6)]-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]- (9CI)
(CA INDEX NAME)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CH2—OH
HO
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R2
O
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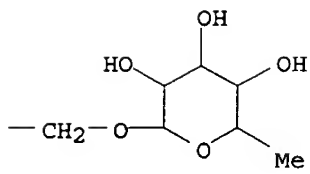
AcNH
AcNH
OH
HO
OH
O
CH—CHO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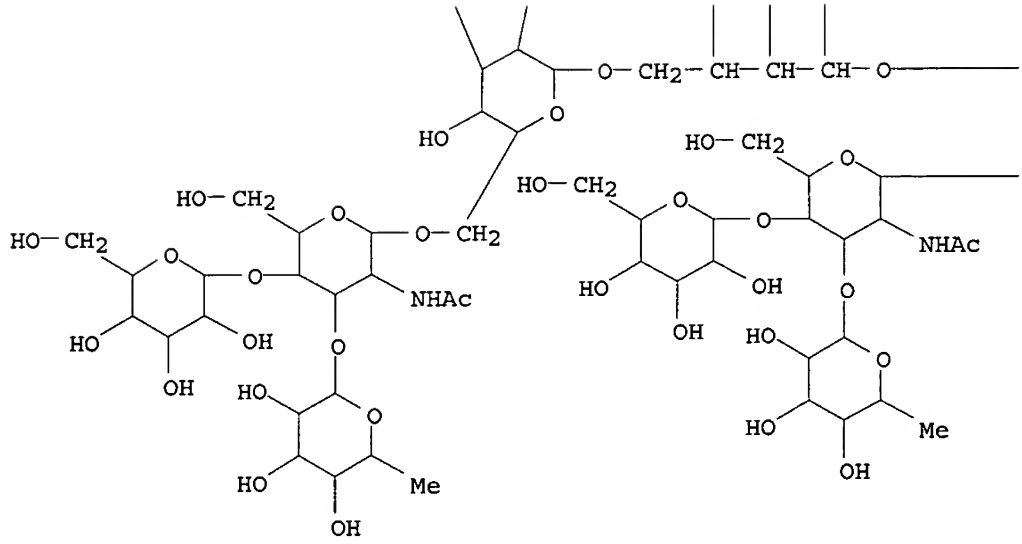
OH
—CH2—O
O
Me

PAGE 2-A



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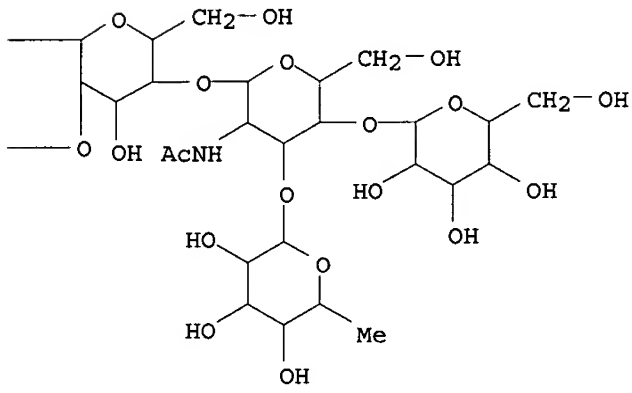

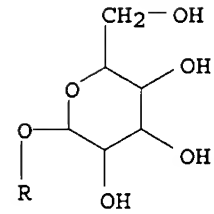

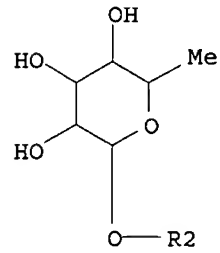

L13 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1989:227946 CAPLUS
DOCUMENT NUMBER: 110:227946
TITLE: Aleuria aurantia agglutinin. A new isolation procedure and further study of its specificity towards various glycopeptides and oligosaccharides
AUTHOR(S): Debray, H.; Montreuil, J.
CORPORATE SOURCE: Lab. Chim. Biol., Univ. Sci. Tech. Lille Flandres-Artois, Villeneuve d'Ascq, F-59655, Fr.
SOURCE: Carbohydrate Research (1989), 185(1), 15-26
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new procedure for isolating a **L-fucose**-specific lectin from the mushroom A. aurantia is described. The fine specificity of the purified lectin was detd. by inhibition of agglutination of human red blood cells by various glycopeptides and oligosaccharides, and by studying the affinity of the immobilized lectin towards .alpha.-(1 .fwdarw. 6)-linked L-fucosyl groups. Immobilized A. aurantia agglutinin interacts strongly with all N-glycosylpeptides or related glycans possessing an .alpha.-L-fucopyranosyl group linked to O-6 of the 2-acetamido-2-deoxy-.beta.-D-glucopyranosyl residue involved in the glycosylamine linkage. In addn., presence of .alpha.-(1 .fwdarw. 3)-linked L-fucosyl groups greatly enhances the affinity of the lectin for the .alpha.-(1 .fwdarw. 6)-L-fucosylated glycans. The immobilized Aleuria lectin is a powerful tool for the resoln. of the microheterogeneity of L-fucosylated glycopeptides and glycans of the N-acetylactosamine type.

IT **120592-86-1**
RL: ANST (Analytical study)
(agglutinin isolated from Aleuria aurantia specificity to)
RN 120592-86-1 CAPLUS
CN L-Asparagine, N-[O-(N-acetyl-.alpha.-neuraminosyl)-(2.fwdarw.6)-O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-(N-acetyl-.alpha.-neuraminosyl)-(2.fwdarw.3)-O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-

glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl]- (9CI) (CA INDEX NAME)

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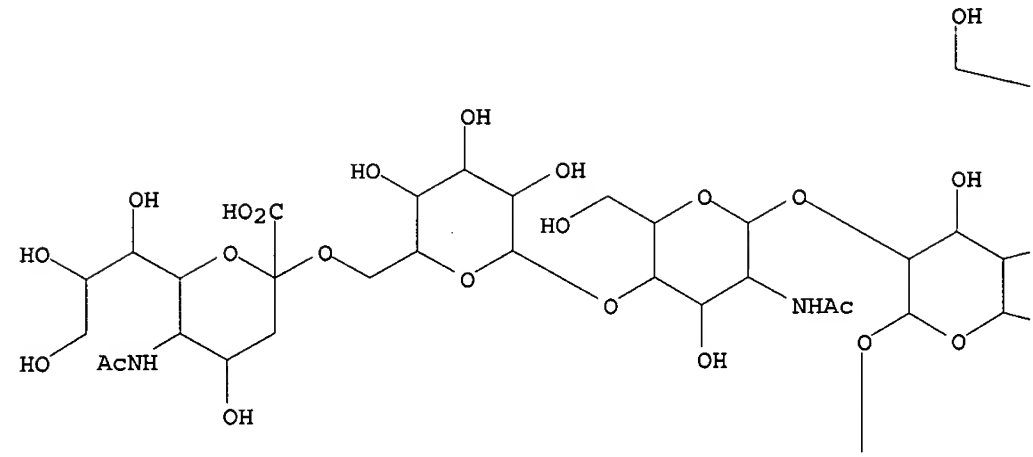

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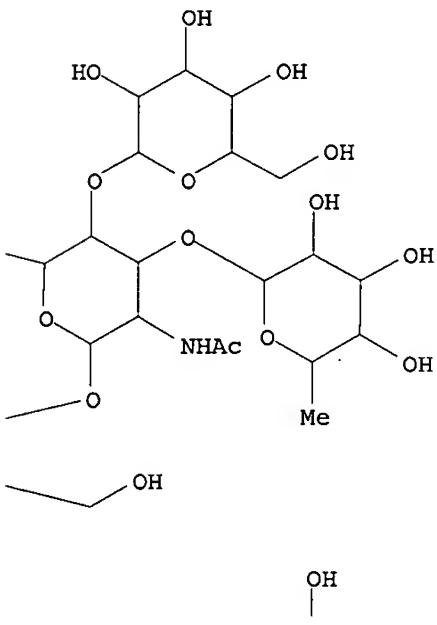

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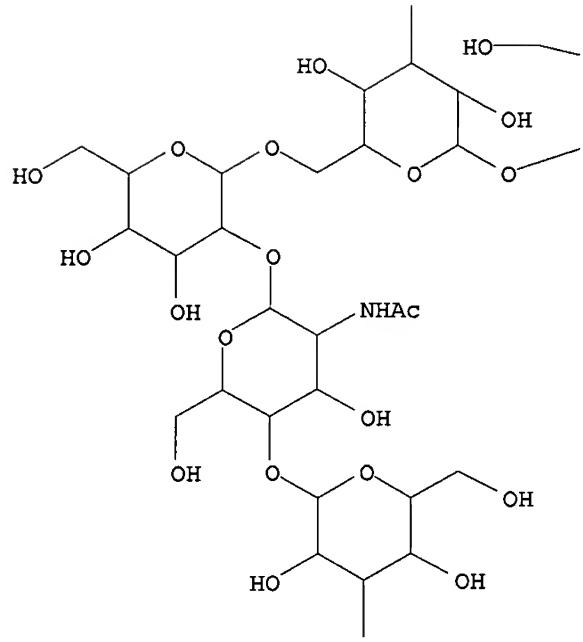

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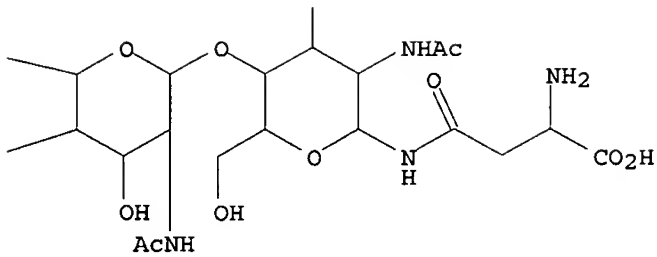

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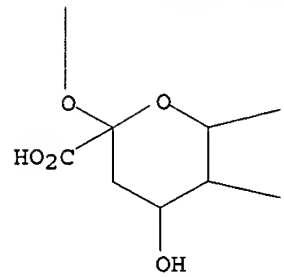

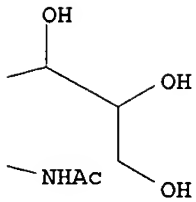


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L2             0 S L1 SSS SAM
L3             1 S L1 SSS FULL
L4               STRUCTURE UPLOADED
L5             2 S L4 SSS SAM
L6           102 S L4 SSS FULL

     FILE 'CAPLUS' ENTERED AT 18:35:01 ON 10 JUL 2003
L7            84 S L6
L8             0 S L7 AND TETRASCACCHARIDE
L9             0 S L7 AND TETRASCACCHARIDES
L10            1 S L7 AND TETRASACCHARIDES
L11            0 S L7 AND PENTASACCHARIDES
L12            6 S L7 AND PENTASACCHARIDE
L13            4 S L7 AND L-FUCOSE

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You have entered a truncated stem whose length is less than
the minimum allowed for left truncation in the requested
search field.  You may increase the length of the stem to
the minimum allowed and try again.  Enter HELP SFIELDS to
to find the minimum stem length for left truncation in
the requested search field.

=> d his

     (FILE 'HOME' ENTERED AT 18:21:00 ON 10 JUL 2003)

     FILE 'REGISTRY' ENTERED AT 18:21:09 ON 10 JUL 2003
L1               STRUCTURE UPLOADED
L2             0 S L1 SSS SAM
L3             1 S L1 SSS FULL
L4               STRUCTURE UPLOADED
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L6           102 S L4 SSS FULL

     FILE 'CAPLUS' ENTERED AT 18:35:01 ON 10 JUL 2003
L7            84 S L6
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L9             0 S L7 AND TETRASCACCHARIDES
L10            1 S L7 AND TETRASACCHARIDES
L11            0 S L7 AND PENTASACCHARIDES
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L13            4 S L7 AND L-FUCOSE
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You have entered a truncated stem whose length is less than
the minimum allowed for left truncation in the requested
search field.  You may increase the length of the stem to
the minimum allowed and try again.  Enter HELP SFIELDS to
to find the minimum stem length for left truncation in
the requested search field.

=> s l7 and L-fucosyl
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          1171 FUCOSYL
           186 L-FUCOSYL
                 (L(W)FUCOSYL)
L14           2 L7 AND L-FUCOSYL

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L14  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:         2001:247347  CAPLUS
DOCUMENT NUMBER:          134:252586
TITLE:                    Preparation of acetamidodeoxy fucosylated
                          oligosaccharides via enzymic glycosidation reaction
INVENTOR(S):              Natunen, Jari
PATENT ASSIGNEE(S):       Carbion Oy, Finland
SOURCE:                   PCT Int. Appl., 43 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.   DATE
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             HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
             LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, RO, RU, SD,
             SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,
             ZA, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
             DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
             CF, CG, CI, CM, GW, ML, MR, NE, SN, TD, TG
     FI 9902070         A    20010328       FI 1999-2070      19990928
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OTHER SOURCE(S):          CASREACT 134:252586
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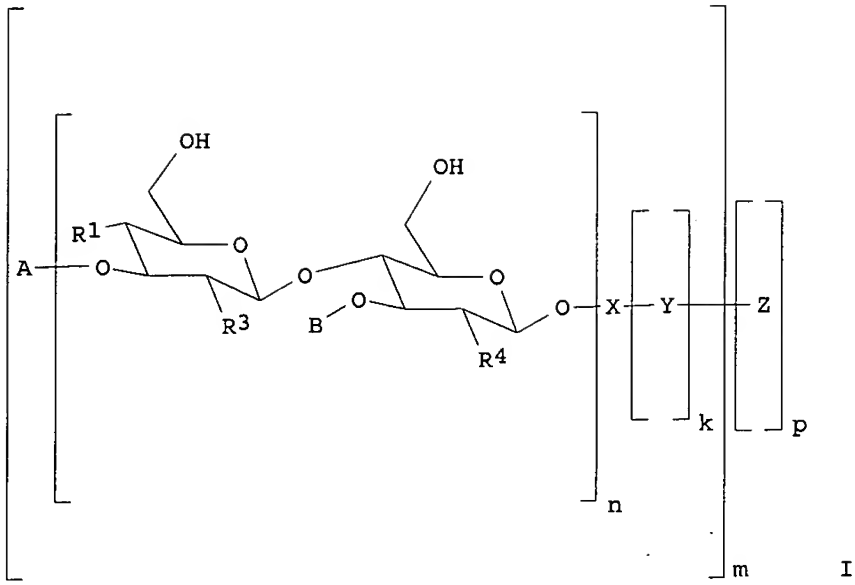


I

AB The present invention relates to a process for the enzymic glycosidation in prepn. of oligosaccharides or oligosaccharide contg. compds., esp. N-acetyl-chitooligosaccharides having a fucosylated monosaccharide I, wherein A is H or a glycosidically .beta.1-3 linked D-glucopyranosyl residue, R1 is OH, R2 is H and R3 is OH or acylamido, -NH-acyl or R1 is H, R2 is OH and R3 is acetamido -NHCOCH3, B is H, or an .alpha.-**L-fucosyl** or an .alpha.-**L-fucosyl** analog, and R4 is OH or acetamido -NHCOCH3, n is 1 to 100, with the proviso that there is always at least one .alpha.-fucosyl or .alpha.-fucosyl analogs group present in the mol., p and k are 0 and m is 1, in which case X is H, an aglycon residue or a monosaccharide selected from the group consisting of Glc, GlcNAc, Gal or GalNAc, optionally in reduced form, or oligosaccharide contg. one or more of said monosaccharide units linked to saccharide X, when n is 1, or p is 1, k is 0 or 1 and 1 < m < 1000, in which case X is a straight bond, or a mono- or oligosaccharide as defined under, Y is a spacer or linking group capable of linking the saccharide or X to Z, and Z is a mono- or polyvalent carrier mol. The invention also relates to novel oligosaccharides or oligosaccharide contg. compds., esp. N-acetyl-chitooligosaccharides, which are fucosylated and optionally covalently bound to a carrier mol. Thus, human fucosyltransferase V-catalyzed glycosidation of N-acetyl-chitotriose and GDP-fucose gave the corresponding fucosylated N-acetyl-chitotriose in 67% yield.

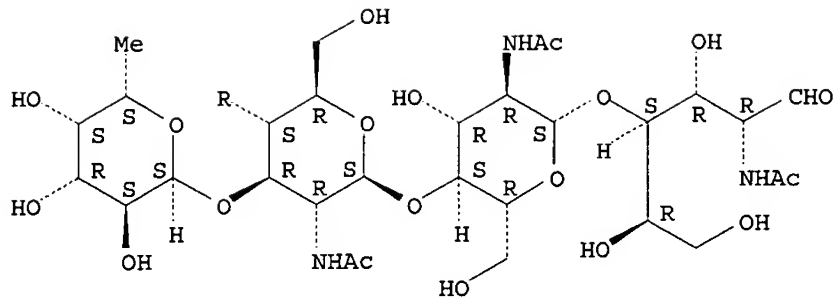
IT **331638-57-4P 331638-62-1P**
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. of acetamidodeoxy fucosylated oligosaccharides via enzymic glycosidation reaction)

RN 331638-57-4 CAPLUS

CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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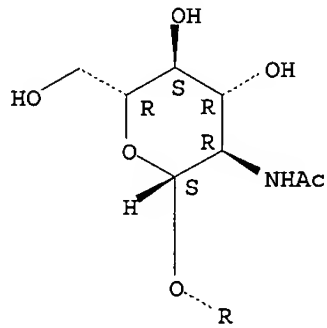
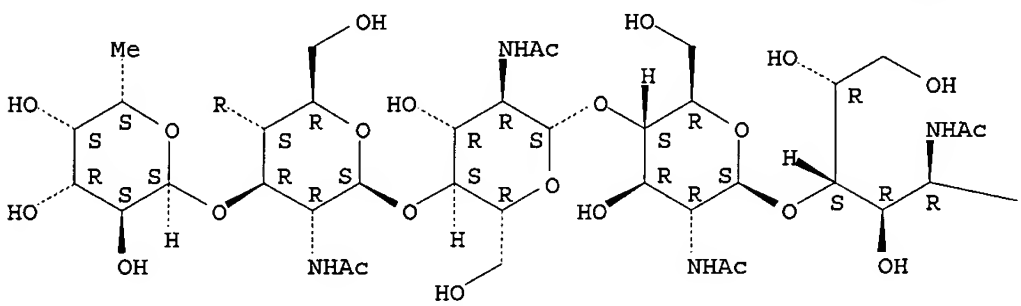


RN 331638-62-1 CAPLUS

CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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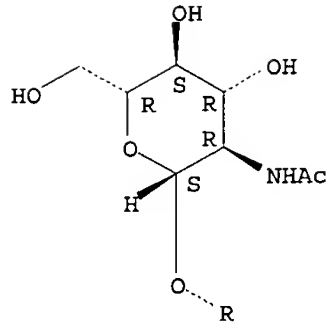


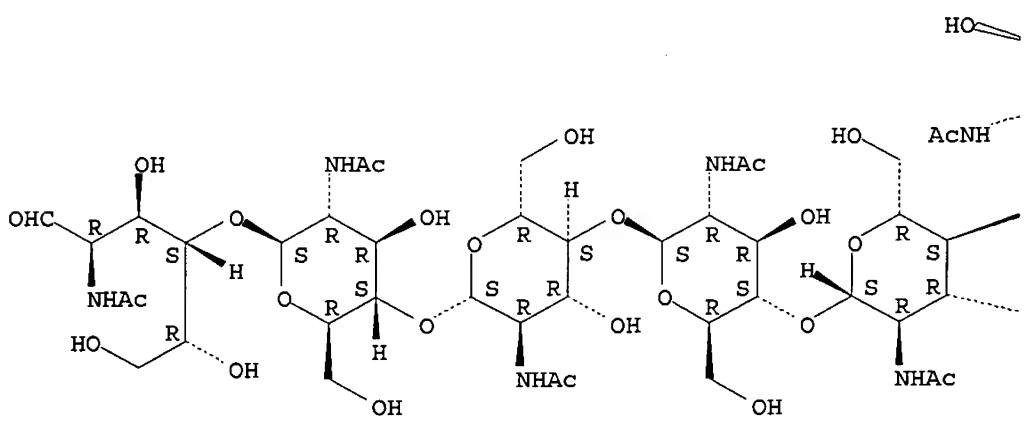
IT **331638-60-9P**
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of acetamidodeoxy fucosylated oligosaccharides via enzymic glycosidation reaction)

RN 331638-60-9 CAPLUS

CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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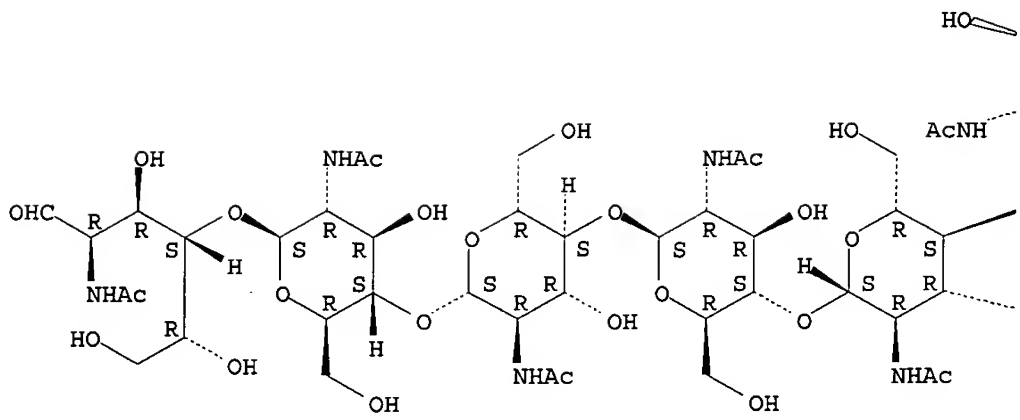

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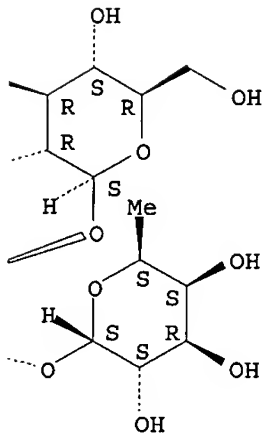


REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1989:227946 CAPLUS
DOCUMENT NUMBER: 110:227946
TITLE: Aleuria aurantia agglutinin. A new isolation procedure and further study of its specificity towards various glycopeptides and oligosaccharides
AUTHOR(S): Debray, H.; Montreuil, J.
CORPORATE SOURCE: Lab. Chim. Biol., Univ. Sci. Tech. Lille Flandres-Artois, Villeneuve d'Ascq, F-59655, Fr.
SOURCE: Carbohydrate Research (1989), 185(1), 15-26
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English

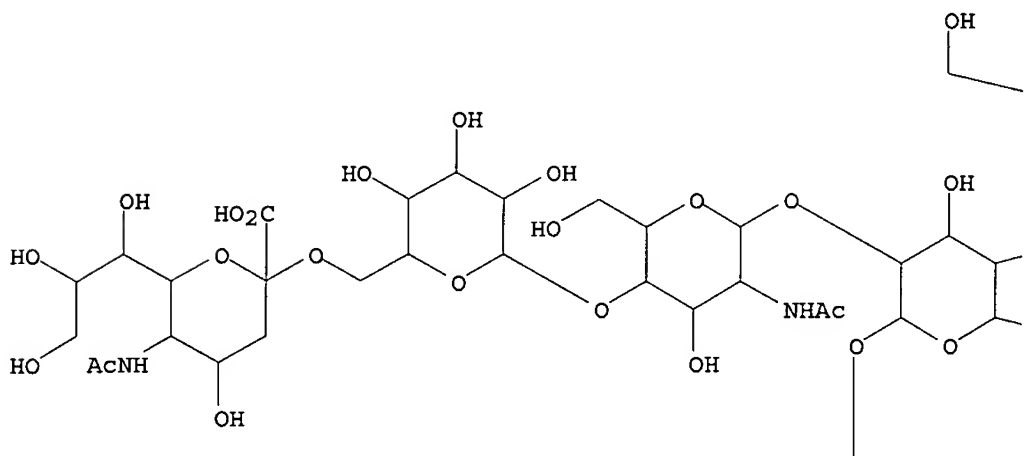
AB A new procedure for isolating a L-fucose-specific lectin from the mushroom A. aurantia is described. The fine specificity of the purified lectin was detd. by inhibition of agglutination of human red blood cells by various glycopeptides and oligosaccharides, and by studying the affinity of the

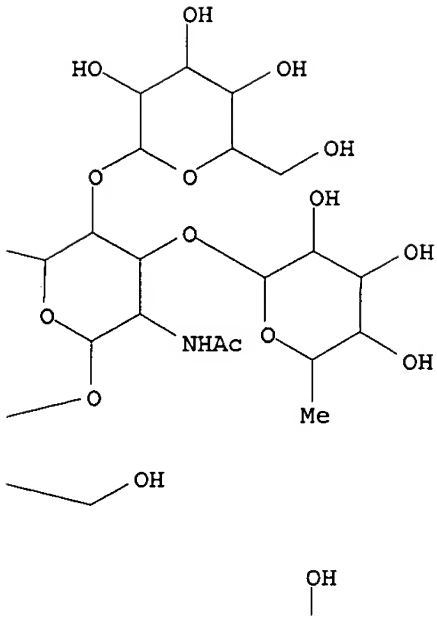
immobilized lectin towards .alpha.-(1 .fwdarw. 6)-linked **L-fucosyl** groups. Immobilized A. aurantia agglutinin interacts strongly with all N-glycosylpeptides or related glycans possessing an .alpha.-L-fucopyranosyl group linked to O-6 of the 2-acetamido-2-deoxy-.beta.-D-glucopyranosyl residue involved in the glycosylamine linkage. In addn., presence of .alpha.-(1 .fwdarw. 3)-linked **L-fucosyl** groups greatly enhances the affinity of the lectin for the .alpha.-(1 .fwdarw. 6)-L-fucosylated glycans. The immobilized Aleuria lectin is a powerful tool for the resoln. of the microheterogeneity of L-fucosylated glycopeptides and glycans of the N-acetylactosamine type.

IT **120592-86-1**
RL: ANST (Analytical study)
(agglutinin isolated from Aleuria aurantia specificity to)

RN 120592-86-1 CAPLUS

CN L-Asparagine, N-[O-(N-acetyl-.alpha.-neuraminosyl)-(2.fwdarw.6)-O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-(N-acetyl-.alpha.-neuraminosyl)-(2.fwdarw.3)-O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl]- (9CI) (CA INDEX NAME)

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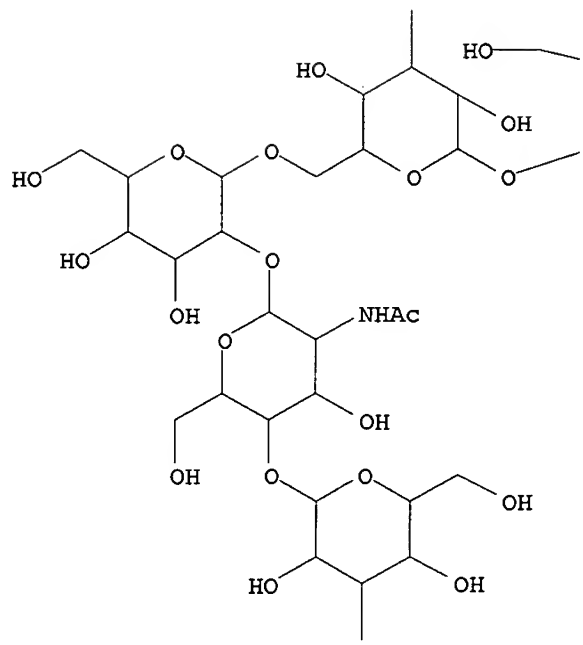
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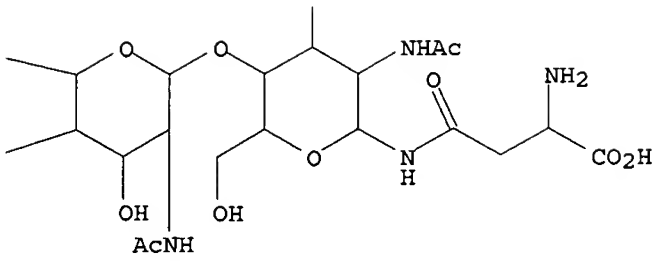
PAGE 2-B



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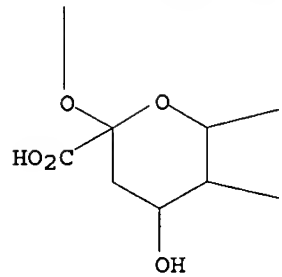

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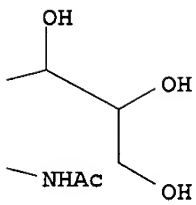


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L5             2 S L4 SSS SAM
L6           102 S L4 SSS FULL

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L7            84 S L6
L8             0 S L7 AND TETRASCACCHARIDE
L9             0 S L7 AND TETRASCACCHARIDES
L10            1 S L7 AND TETRASACCHARIDES
L11            0 S L7 AND PENTASACCHARIDES
L12            6 S L7 AND PENTASACCHARIDE
L13            4 S L7 AND L-FUCOSE
L14            2 S L7 AND L-FUCOSYL
```

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7 and L-galactopyranosyl
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         4015 GALACTOPYRANOSYL
            1 GALACTOPYRANOSYLS
         4015 GALACTOPYRANOSYL
                 (GALACTOPYRANOSYL OR GALACTOPYRANOSYLS)
           74 L-GALACTOPYRANOSYL
                 (L(W)GALACTOPYRANOSYL)
L15           0 L7 AND L-GALACTOPYRANOSYL

=> s l7 and ?L-galactopyranosyl
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You have entered a truncated stem whose length is less than
the minimum allowed for left truncation in the requested
search field.  You may increase the length of the stem to
the minimum allowed and try again.  Enter HELP SFIELDS to
to find the minimum stem length for left truncation in
the requested search field.

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=> s l7 and ?galactopyranosyl?
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=> s l7 and L-galactopyranosyl?
      1282162 L
         4510 GALACTOPYRANOSYL?
           78 L-GALACTOPYRANOSYL?
                 (L(W)GALACTOPYRANOSYL?)
L18           0 L7 AND L-GALACTOPYRANOSYL?

=> s l7 and ?L-galactopyranosyl?
'?L' NOT LONG ENOUGH FOR LEFT TRUNCATION
You have entered a truncated stem whose length is less than
the minimum allowed for left truncation in the requested
search field.  You may increase the length of the stem to
the minimum allowed and try again.  Enter HELP SFIELDS to
to find the minimum stem length for left truncation in
the requested search field.

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      3297275 6
        48186 DEOXY
      1410836 ALPHA
         2476 ALPHAS
      1410926 ALPHA
                 (ALPHA OR ALPHAS)
      1282162 L
         4015 GALACTOPYRANOSYL
            1 GALACTOPYRANOSYLS
         4015 GALACTOPYRANOSYL
                 (GALACTOPYRANOSYL OR GALACTOPYRANOSYLS)
           19 O-6-DEOXY-.ALPHA.-L-GALACTOPYRANOSYL-
                 (O(W)6(W)DEOXY(W)ALPHA(W)L(W)GALACTOPYRANOSYL)
L19           0 L7 AND O-6-DEOXY-.ALPHA.-L-GALACTOPYRANOSYL-

=> d his

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L2              0 S L1 SSS SAM
L3              1 S L1 SSS FULL
L4                STRUCTURE UPLOADED
L5              2 S L4 SSS SAM
L6            102 S L4 SSS FULL

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L11             0 S L7 AND PENTASACCHARIDES
L12             6 S L7 AND PENTASACCHARIDE
L13             4 S L7 AND L-FUCOSE
L14             2 S L7 AND L-FUCOSYL
L15             0 S L7 AND L-GALACTOPYRANOSYL
L16             0 S L7 AND ?GALACTOPYRANOSYL
L17             0 S L7 AND ?GALACTOPYRANOSYL?
L18             0 S L7 AND L-GALACTOPYRANOSYL?
L19             0 S L7 AND O-6-DEOXY-.ALPHA.-L-GALACTOPYRANOSYL-

=> s l7 and .alpha.-L-galactopyranosyl-
       1410836 ALPHA
          2476 ALPHAS
       1410926 ALPHA
                  (ALPHA OR ALPHAS)
       1282162 L
          4015 GALACTOPYRANOSYL
             1 GALACTOPYRANOSYLS
          4015 GALACTOPYRANOSYL
                  (GALACTOPYRANOSYL OR GALACTOPYRANOSYLS)
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             302 HEXASACCHARIDES
L21            0 L7 AND HEXASACCHARIDES

=> s l7 and hexasaccharide
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             302 HEXASACCHARIDES
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                  (HEXASACCHARIDE OR HEXASACCHARIDES)
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=> d l22 1-5 ibib abs hitstr

L22  ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:         1999:819519  CAPLUS
DOCUMENT NUMBER:          132:49115
TITLE:                    Purified Alteromonas macleodii polysaccharide and its
                          uses
INVENTOR(S):              Rougeaux, Helene; Guezennec, Jean
PATENT ASSIGNEE(S):       Institut Francais De Recherche Pour L'exploitation De
                          La Mer (Ifremer), Fr.; Cooperative Laitiere De
                          Ploudaniel
SOURCE:                   PCT Int. Appl., 26 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 French
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FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

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RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2780063	A1	19991224	FR 1998-7839	19980622
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AU 9942704	A1	20000110	AU 1999-42704	19990622
EP 1171625	A1	20020116	EP 1999-957183	19990622
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JP 2002518586	T2	20020625	JP 2000-556051	19990622
US 6545145	B1	20030408	US 2001-720238	20010302

PRIORITY APPLN. INFO.:
FR 1998-7839 A 19980622
WO 1999-FR1490 W 19990622

AB The invention concerns a purified polysaccharide consisting of glucose, galactose, glucuronic acid, galacturonic acid, and pyruvate mannose, combined in a repeat **hexasaccharide** unit, said polysaccharide comprising n saccharide units, n being .gtoreq.1. Said polysaccharide is useful in particular in the agri-foodstuff sector.

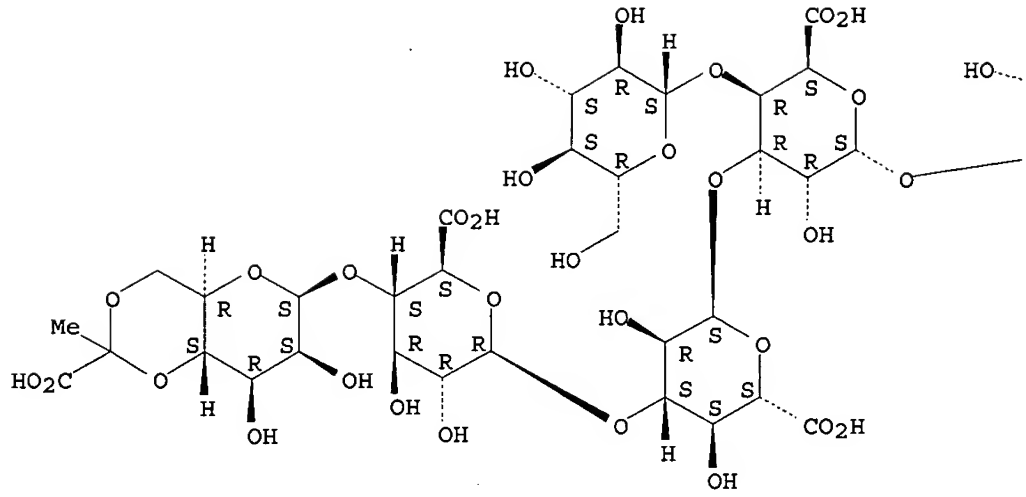
IT **219509-83-8P**
RL: BMF (Bioindustrial manufacture); BOC (Biological occurrence); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); FFD (Food or feed use); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(purified Alteromonas macleodii polysaccharide and its food and feed uses)

RN 219509-83-8 CAPLUS

CN .alpha.-D-Galactopyranose, O-4,6-O-(1-carboxyethylidene)-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-.beta.-D-glucopyranuronosyl-(1.fwdarw.3)-O-.alpha.-D-glucopyranuronosyl-(1.fwdarw.3)-O-[.beta.-D-glucopyranosyl-(1.fwdarw.4)]-O-.alpha.-D-galactopyranuronosyl-(1.fwdarw.4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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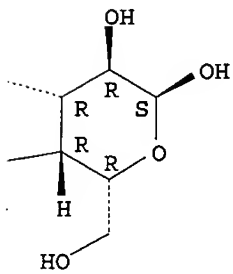


REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1998:768710 CAPLUS
DOCUMENT NUMBER: 130:91895
TITLE: Structural studies of an exopolysaccharide produced by Alteromonas macleodii subsp. fijiensis originating from a deep-sea hydrothermal vent
AUTHOR(S): Rougeaux, Helene; Talag, Philippe; Carlson, Russell W.; Guezennec, Jean
CORPORATE SOURCE: Groupe EVEN, Ploudaniel, 29260, Fr.
SOURCE: Carbohydrate Research (1998), 312(1-2), 53-59
CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

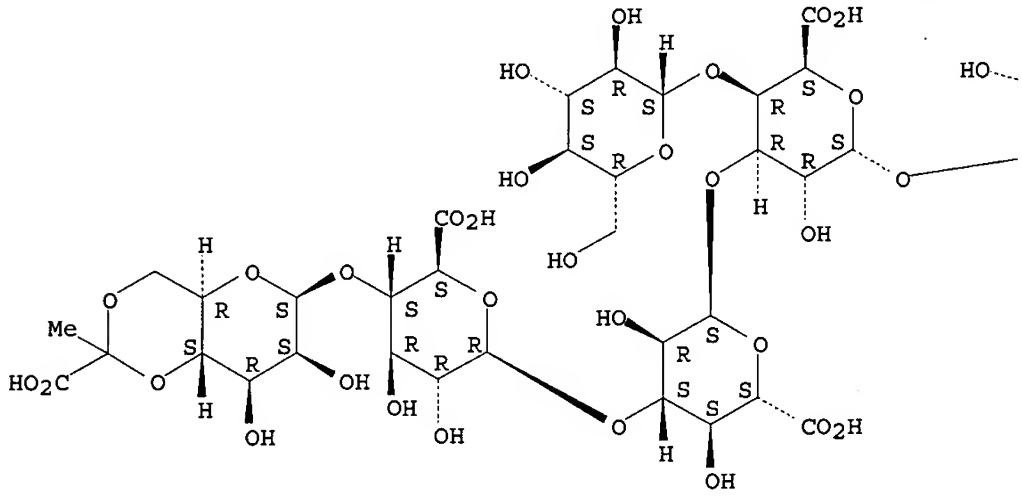
AB The structure of the exopolysaccharide produced by Alteromonas macleodii subsp. fijiensis recovered from a deep-sea hydrothermal vent has been investigated. By means of chem. anal. and NMR studies, the repeating unit of the polymer was deduced to be a branched **hexasaccharide**.

IT **219509-83-8**
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(as repeating unit in exopolysaccharide produced by Alteromonas macleodii originating from deep-sea hydrothermal vent)

RN 219509-83-8 CAPLUS
CN .alpha.-D-Galactopyranose, O-4,6-O-(1-carboxyethylidene)-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-.beta.-D-glucopyranuronosyl-(1.fwdarw.3)-O-.alpha.-D-glucopyranuronosyl-(1.fwdarw.3)-O-[.beta.-D-glucopyranosyl-(1.fwdarw.4)]-O-.alpha.-D-galactopyranuronosyl-(1.fwdarw.4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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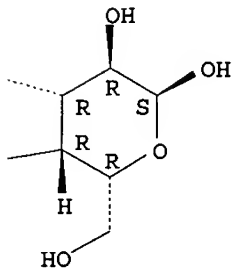

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L22 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS
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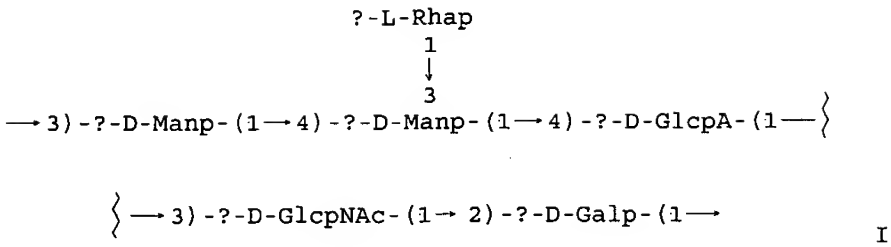
DOCUMENT NUMBER: 122:133614
TITLE: Structural studies of the Shigella boydii type 5 O-antigen polysaccharide
AUTHOR(S): John Albert, M.; Holme, Tord; Lindberg, Bengt; Lindberg, Johan; Mosihuzzaman, M.; Qadri, Firdausi; Mahbubur Rahman, M.
CORPORATE SOURCE: Department of Laboratory Research, International Centre for Diarrhoeal Research, Bangladesh, (ICDDR, B), Dhaka-1000, Bangladesh
SOURCE: Carbohydrate Research (1994), 265(1), 121-7
CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER: Elsevier

DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB The structure of the glucuronic acid-contg. **hexasaccharide** I repeating unit of Shigella boydii type 5 O-antigen polysaccharide has been investigated by sugar and methylation analyses, and specific degrdns.

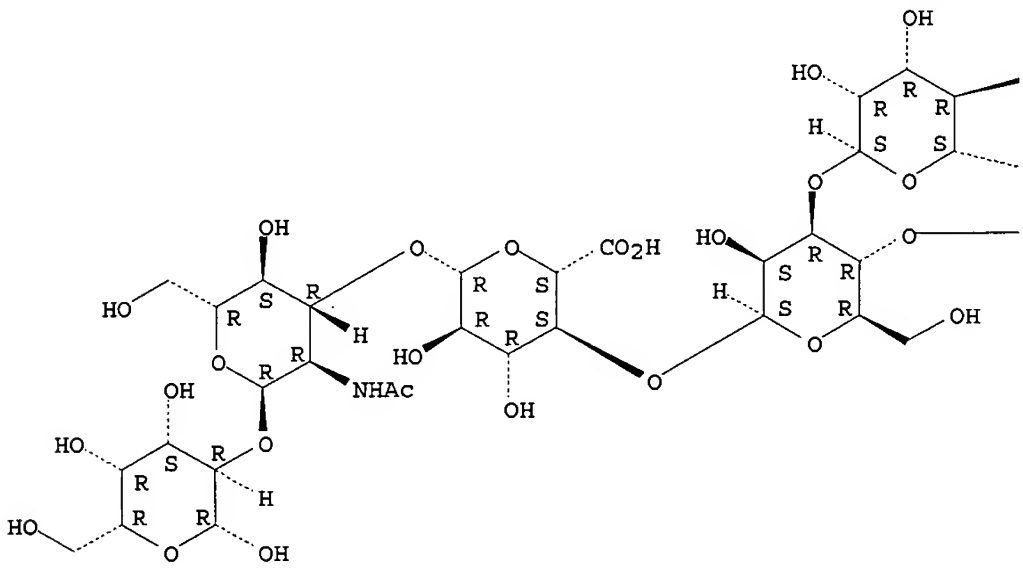
IT **161033-29-0P**
RL: PRP (Properties); PUR (Purification or recovery); PREP (Preparation)
(mol. structure of the repeating unit of Shigella boydii type 5 O-antigen polysaccharide)

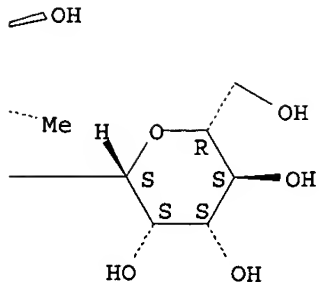
RN 161033-29-0 CAPLUS

CN .beta.-D-Galactopyranose, O-6-deoxy-.alpha.-L-mannopyranosyl-(1.fwdarw.3)-O-[.beta.-D-mannopyranosyl-(1.fwdarw.4)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-.beta.-D-glucopyranuronosyl-(1.fwdarw.3)-O-2-(acetylamino)-2-deoxy-.alpha.-D-glucopyranosyl-(1.fwdarw.2)- (9CI) (CA INDEX NAME)

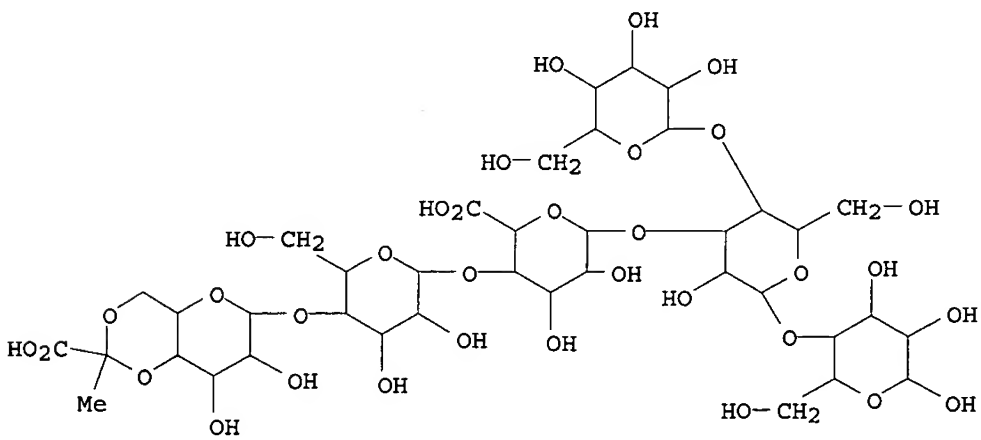
Absolute stereochemistry.

PAGE 1-A





L22 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1991:243973 CAPLUS
DOCUMENT NUMBER: 114:243973
TITLE: Exopolysaccharide structure from Bacillus circulans
AUTHOR(S): Fontaine, Thierry; Wieruszeski, Jean Michel; Talmont, Frank; Saniez, Marie Helene; Duflot, Pierrick; Leleu, Jean Bernard; Fournet, Bernard
CORPORATE SOURCE: Lab. Chim. Biol., Univ. Sci. Tech. Lille Flandres-Artois, Villeneuve d'Ascq, F-59655, Fr.
SOURCE: European Journal of Biochemistry (1991), 196(1), 107-13
CODEN: EJBCAI; ISSN: 0014-2956
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The exopolysaccharide harvested from the liq. culture medium after B. circulans fermn. consists of the **hexasaccharide** repeating unit.
IT **134014-47-4**
RL: BIOL (Biological study)
(repeating unit, of exopolysaccharide of Bacillus circulans)
RN 134014-47-4 CAPLUS
CN .alpha.-D-Glucopyranose, O-4,6-O-(1-carboxyethylidene)-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-.beta.-D-glucopyranuronosyl-(1.fwdarw.3)-O-[.alpha.-D-glucopyranosyl-(1.fwdarw.4)]-O-.alpha.-D-galactopyranosyl-(1.fwdarw.4)- (9CI) (CA INDEX NAME)



L22 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1977:401460 CAPLUS
DOCUMENT NUMBER: 87:1460
TITLE: Structure of Pneumococcus Type XXII capsular polysaccharide
AUTHOR(S): Chatterjee, B. P.; Purkayastha, S.; Rao, C. V. N.
CORPORATE SOURCE: Dep. Macromol., Indian Assoc. Cultiv. Sci., Calcutta, India
SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1976), 14B(12), 914-18
CODEN: IJSBDB; ISSN: 0376-4699
DOCUMENT TYPE: Journal
LANGUAGE: English

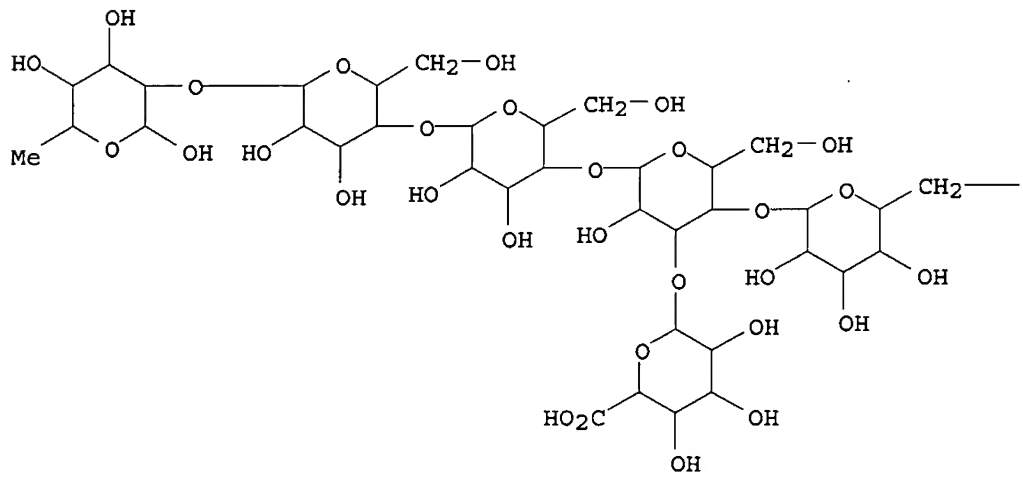
AB Pneumococcus Type XXII capsular polysaccharide (SXXII) on treatment with acid phosphatase followed by alkali gave 2 polysaccharide fragments, the structures of which were detd. on the basis of periodate oxidn. and graded hydrolysis. On the basis of the results obtained from periodate oxidn. and Smith and Berry degrdns., a tentative structure for the polysaccharide repeating unit was established, in which the 1 or 3 position of the erythritol residue is linked by a phosphate group to a **hexasaccharide** side chain and the other position is linked by a glycosidic bond to the main chain of the polysaccharide. The polysaccharide contains both .alpha.- and .beta.-glycosidic linkages, and includes D-galactose, D-glucose, L-arabinose, L-rhamnose, and D-glucuronic acid in addn. to erythritol and phosphate.

IT **62903-52-0**
RL: BIOL (Biological study)
(of Pneumococcus capsular polysaccharide)

RN 62903-52-0 CAPLUS

CN L-Mannopyranose, O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-[.alpha.-D-glucopyranuronosyl-(1.fwdarw.3)]-O-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-.beta.-D-glucopyranosyl-(1.fwdarw.2)-6-deoxy- (9CI) (CA INDEX NAME)

PAGE 1-A



— OH

Uploading fucose-oligo4.str

L23 STRUCTURE UPLOADED

=> d l23
L23 HAS NO ANSWERS
L23 STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.

=> s l23 sss sam
SAMPLE SEARCH INITIATED 19:11:40 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 1240 TO ITERATE

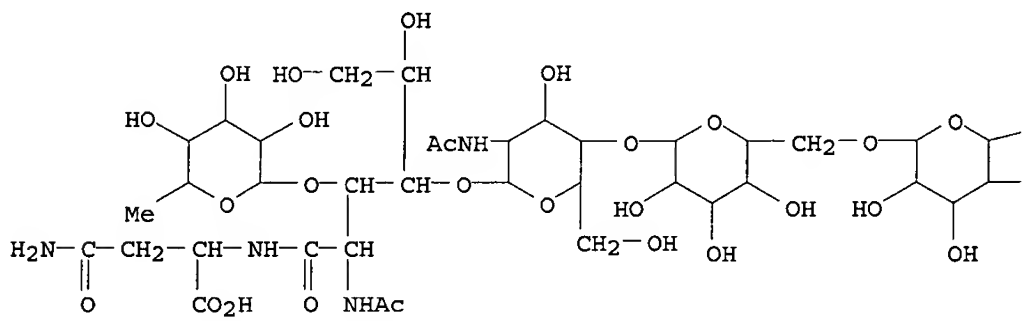
80.6% PROCESSED 1000 ITERATIONS 2 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

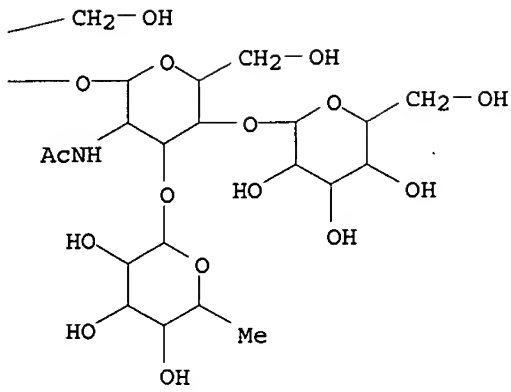
FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 22688 TO 26912
PROJECTED ANSWERS: 2 TO 143

L24 2 SEA SSS SAM L23

=> d scan

L24 2 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN L-Asparagine, N2-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-.alpha.-D-mannopyranosyl-(1.fwdarw.6)-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-D-gluconoyl]- (9CI)
MF C58 H97 N5 O42



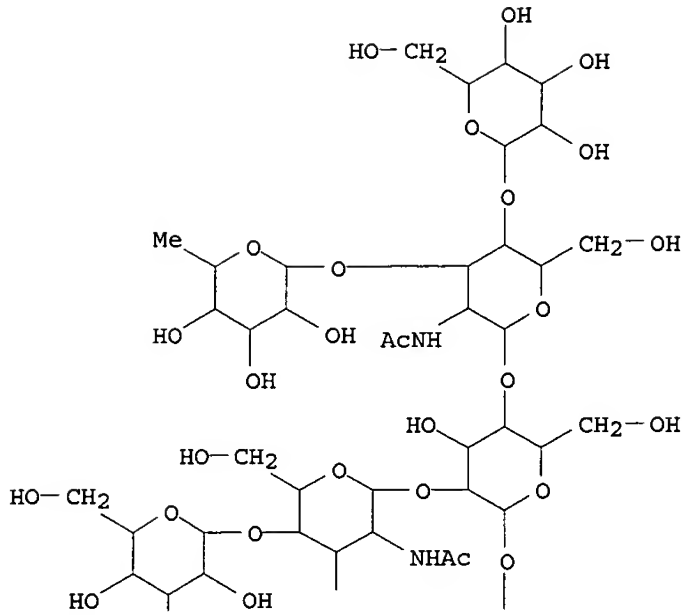


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

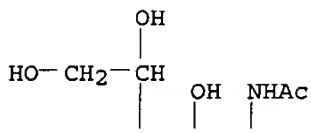
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L24 2 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN D-Glucitol-1-O-t, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.6)]-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI)
MF C102 H171 N6 O74 T

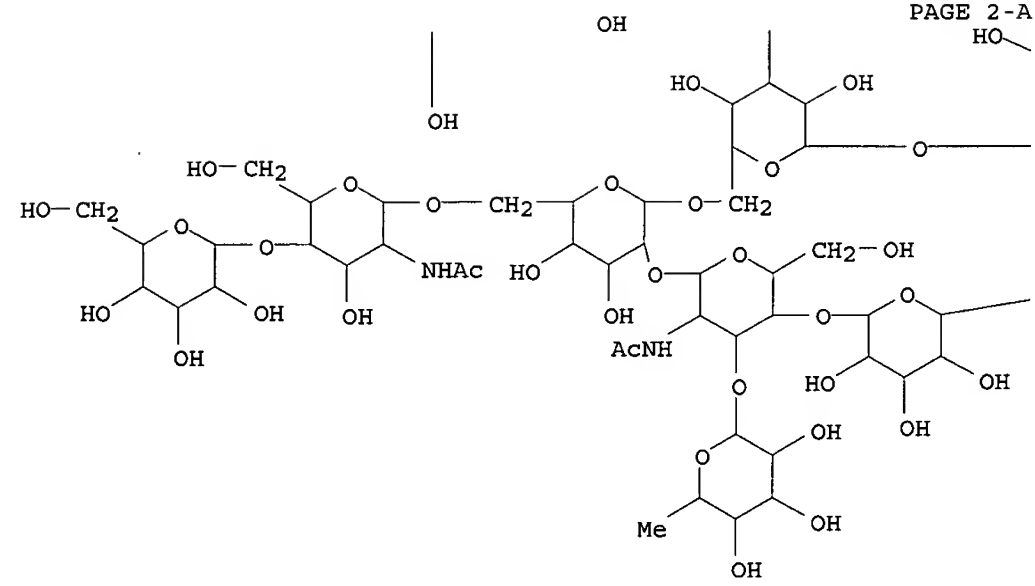
PAGE 1-A



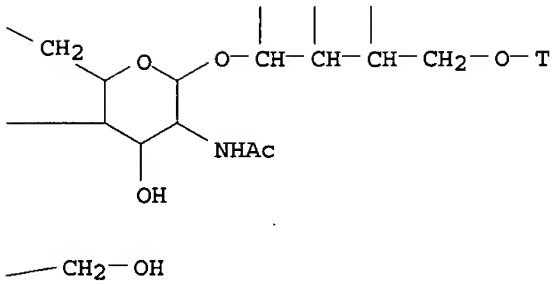
PAGE 1-B



PAGE 2-A



PAGE 2-B



ALL ANSWERS HAVE BEEN SCANNED

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FULL SEARCH INITIATED 19:12:05 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -  25766 TO ITERATE

100.0% PROCESSED   25766 ITERATIONS                          78 ANSWERS
SEARCH TIME: 00.00.01

L25          78 SEA SSS FUL L23

=> d scan

L25  78 ANSWERS   REGISTRY  COPYRIGHT 2003 ACS
IN   L-Asparagine, N-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.6)-O-[O-6-
     deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-
     (1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-
     (1.fwdarw.2)-O-.alpha.-D-mannopyranosyl-(1.fwdarw.6)-O-[O-6-deoxy-.alpha.-
     L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-
     O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-.alpha.-D-
     mannopyranosyl-(1.fwdarw.3)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-2-
     (acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)]-2-
     (acetylamino)-2-deoxy-.beta.-D-glucopyranosyl]- (9CI)
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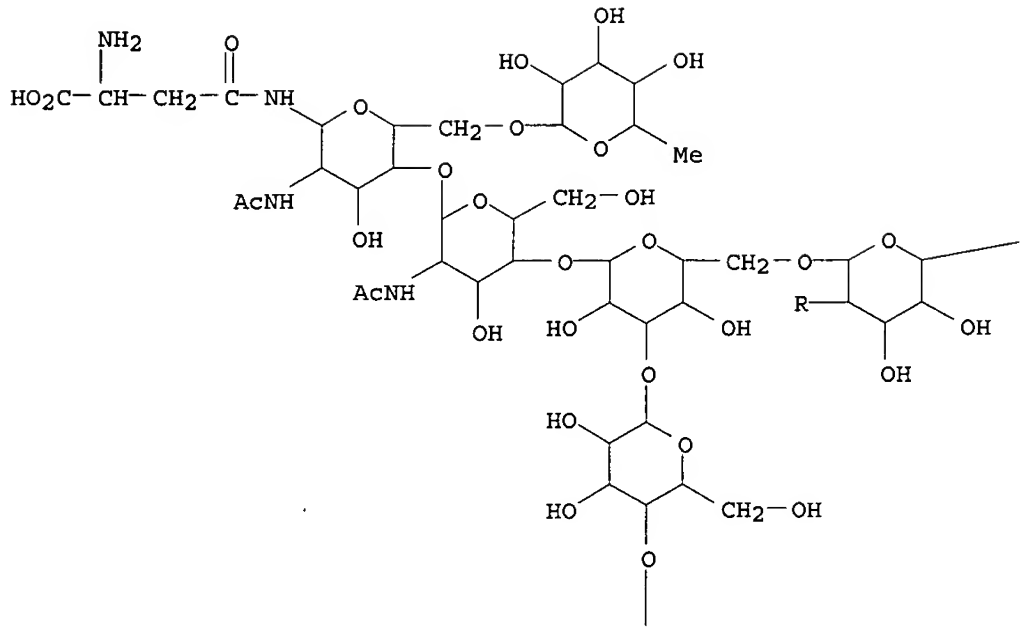
MF C84 H140 N6 O60

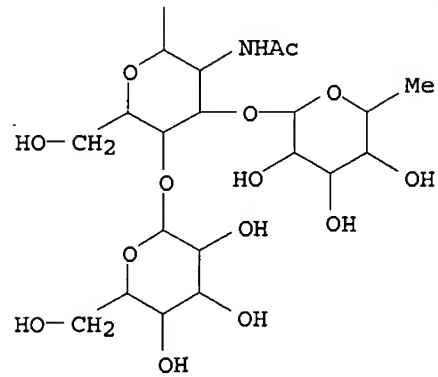
PAGE 1-A



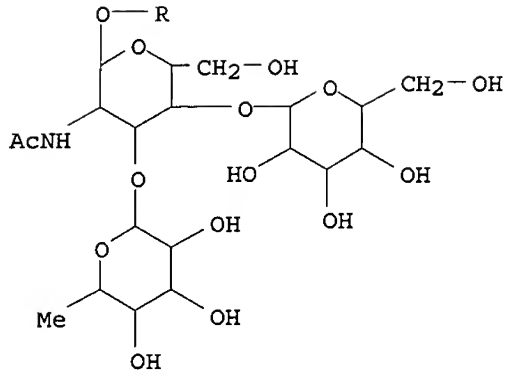
PAGE 1-B

— CH_2 — OH

PAGE 2-A



PAGE 3-A



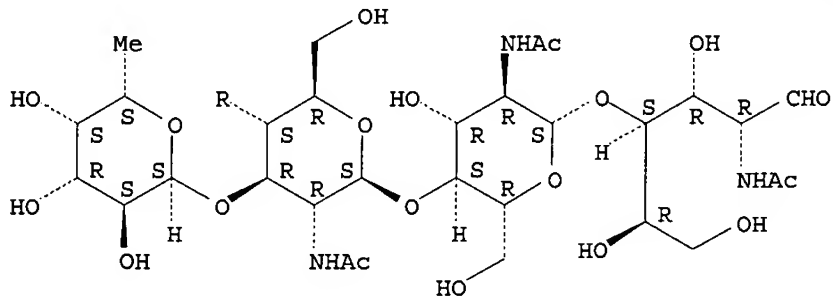
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L25 78 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI)
MF C38 H64 N4 O25

Absolute stereochemistry.

PAGE 1-A



```
=> s l25
L26          62 L25

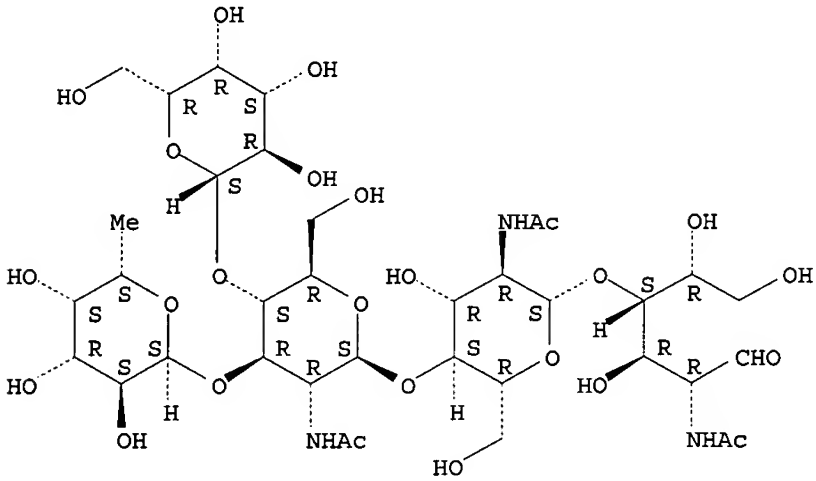
=> s l25 and tetrasaccharides
             62 L25
            817 TETRASACCHARIDES
L27           1 L25 AND TETRASACCHARIDES

=> d l27 1 ibib abs hitstr

L27  ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:         1999:150793  CAPLUS
DOCUMENT NUMBER:          130:348917
TITLE:                    In vitro .alpha.1-3 or .alpha.1-4 fucosylation of type
                          I and II oligosaccharides with secreted forms of
                          recombinant human fucosyltransferases III and VI
AUTHOR(S):                Nimtz, Manfred; Grabenhorst, Eckart; Gambert, Ulrike;
                          Costa, Julia; Wray, Victor; Morr, Michael; Thiem,
                          Joachim; Conradt, Harald S.
CORPORATE SOURCE:         Gesellschaft fur Biotechnologische Forschung,
                          Braunschweig, 38124, Germany
SOURCE:                   Glycoconjugate Journal (1998), 15(9), 873-883
                          CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER:                Kluwer Academic Publishers
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   Transgalactosylation of chitobiose and chitotriose employing
     .beta.-galactosidase from bovine testes yielded mixts. with .beta.1-3
     linked galactose (type I) and .beta.1-4 linked galactose (type II) in a
     final ratio of 1:1 for the tri- and 1:1.4 for the tetrasaccharide. After
     24 h incubations of the two purified oligosaccharide mixts. with large
     amts. (20-fold increase compared with std. conditions) of human .alpha.1,
     3/4-fucosyltransferase III (FucT III), the type I tri-/
     tetrasaccharides were completely converted to the Lewisa
     structure, whereas approx. 10% fucosylation of the type II isomers to the
     Lewisx oligosaccharides was obsd. in long-term incubations. Employing
     large amts. of human .alpha.1, 3-fucosyltransferase VI (FucT VI), the type
     I trisaccharide substrate was exclusively fucosylated at the proximal 0-4
     substituted N-acetylglucosamine (GlcNAc) (20%) whereas almost all of the
     type II isomers was converted to the corresponding Lewisx product. 45% Of
     the type I tetrasaccharide was fucosylated at the second GlcNAc solely by
     FucT VI. The type II isomer was almost completely .alpha.1-3 fucosylated
     to yield the Lewisx deriv. with traces of a structure that contained an
     addnl. fucose at the reducing GlcNAc. The results obtained in the present
     study employing high amts. of enzyme confirmed our previous results that
     FucT III acts preponderantly as a .alpha.1-4 fucosyltransferase onto
     GlcNAc in vitro. Human FucT VI attaches fucose exclusively in an
     .alpha.1-3 linkage to 4-substituted GlcNAc in vitro and does not modify
     any 3-substituted GlcNAc to yield Lewisa oligosaccharides. With
     8-methoxycarbonyl-octyl glycoside acceptors used under std. conditions,
     FucT III acts exclusively on the type I and FucT VI only on the type II
     deriv. With lacto-N-tetraose, lacto-N-fucopentraose I, or
     LS-tetrasaccharide as substrates, FucT III modified the 3-substituted
     GlcNAc and the reducing glucose; FucT VI recognized only
     lacto-N-neotetraose as a substrate.
IT   225089-62-3
     RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL
     (Biological study); FORM (Formation, nonpreparative)
        (in vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II
        oligosaccharides with secreted forms of recombinant human
        fucosyltransferases III and VI)
RN   225089-62-3  CAPLUS
CN   D-Glucose, 0-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-
     galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-
```

glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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DD IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> d his

(FILE 'HOME' ENTERED AT 18:21:00 ON 10 JUL 2003)

FILE 'REGISTRY' ENTERED AT 18:21:09 ON 10 JUL 2003
L1 STRUCTURE UPLOADED
L2 0 S L1 SSS SAM
L3 1 S L1 SSS FULL
L4 STRUCTURE UPLOADED
L5 2 S L4 SSS SAM
L6 102 S L4 SSS FULL

FILE 'CAPLUS' ENTERED AT 18:35:01 ON 10 JUL 2003
L7 84 S L6
L8 0 S L7 AND TETRASCACCHARIDE
L9 0 S L7 AND TETRASCACCHARIDES
L10 1 S L7 AND TETRASACCHARIDES
L11 0 S L7 AND PENTASACCHARIDES
L12 6 S L7 AND PENTASACCHARIDE
L13 4 S L7 AND L-FUCOSE
L14 2 S L7 AND L-FUCOSYL
L15 0 S L7 AND L-GALACTOPYRANOSYL
L16 0 S L7 AND ?GALACTOPYRANOSYL
L17 0 S L7 AND ?GALACTOPYRANOSYL?
L18 0 S L7 AND L-GALACTOPYRANOSYL?
L19 0 S L7 AND O-6-DEOXY-.ALPHA.-L-GALACTOPYRANOSYL-
L20 0 S L7 AND .ALPHA.-L-GALACTOPYRANOSYL-
L21 0 S L7 AND HEXASACCHARIDES

```
L22           5 S L7 AND HEXASACCHARIDE

     FILE 'REGISTRY' ENTERED AT 19:10:54 ON 10 JUL 2003
L23             STRUCTURE UPLOADED
L24           2 S L23 SSS SAM
L25          78 S L23 SSS FULL

     FILE 'CAPLUS' ENTERED AT 19:12:43 ON 10 JUL 2003
L26          62 S L25
L27           1 S L25 AND TETRASACCHARIDES

=> s l25 and pentasaccharides
            62 L25
           365 PENTASACCHARIDES
L28          0 L25 AND PENTASACCHARIDES

=> s l25 and pentasaccharide
            62 L25
          1377 PENTASACCHARIDE
           365 PENTASACCHARIDES
          1603 PENTASACCHARIDE
                 (PENTASACCHARIDE OR PENTASACCHARIDES)
L29           4 L25 AND PENTASACCHARIDE

=> d l29 1-4 ibib abs hitstr

L29  ANSWER 1 OF 4  CAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:         2002:390036  CAPLUS
DOCUMENT NUMBER:          137:32022
TITLE:                    Functional analysis of the carbohydrate recognition
                          domains and a linker peptide of galectin-9 as to
                          eosinophil chemoattractant activity
AUTHOR(S):                Sato, Miki; Nishi, Nozomu; Shoji, Hiroki; Seki,
                          Masako; Hashidate, Tomomi; Hirabayashi, Jun; Kasai,
                          Ken-Ichi; Hata, Yuiro; Suzuki, Shigehiko; Hirashima,
                          Mitsuomi; Nakamura, Takanori
CORPORATE SOURCE:         Department of Endocrinology, Plastic and
                          Reconstructive Surgery, Kagawa Medical University,
                          Kagawa, 761-0793, Japan
SOURCE:                   Glycobiology (2002), 12(3), 191-197
                          CODEN: GLYCE3; ISSN: 0959-6658
PUBLISHER:                Oxford University Press
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   Human galectin-9 is a .beta.-galactoside-binding protein consisting of two
     carbohydrate recognition domains (CRDs) and a linker peptide.  We have
     shown that galectin-9 represents a novel class of eosinophil
     chemoattractants (ECAs) produced by activated T cells.  A previous study
     demonstrated that the carbohydrate binding activity of galectin-9 is
     indispensable for eosinophil chemoattraction and that the N- and
     C-terminal CRDs exhibit comparable ECA activity, which is substantially
     lower than that of full-length galectin-9.  In this study, we investigated
     the roles of the two CRDs in ECA activity in conjunction with the
     sugar-binding properties of the CRDs.  In addn., to address the
     significance of the linker peptide structure, we compare the three
     isoforms of galectin-9, which only differ in the linker peptide region, in
     terms of ECA activity.  Recombinant proteins consisting of two N-terminal
     CRDs (galectin-9NN), two C-terminal CRDs (galectin-9CC), and three
     isoforms of galectin-9 (galectin-9S, -9M, and -9L) were generated.  All
     the recombinant proteins had hemagglutination activity comparable to that
     of the predominant wild-type galectin-9 (galectin-9M).  Galectin-9NN and
     galectin-9CC induced eosinophil chemotaxis in a manner indistinguishable
     from the case of galectin-9M.  Although the isoform of galectin-9 with the
     longest linker peptide, galectin-9L, exhibited limited soly., the three
```

isoforms showed comparable ECA activity over the concn. range tested. The interactions between N- and C-terminal CRDs and glycoprotein glycans and glycolipid glycans were examd. using frontal affinity chromatog. Both CRDs exhibited high affinity for branched complex type sugar chain, esp. for tri- and tetraantennary N-linked glycans with N-acetyllactosamine units, and the oligosaccharides inhibited the ECA activity at low concns. These results suggest that the N- and C-terminal CRDs of galectin-9 interact with the same or a closely related ligand on the eosinophil membrane when acting as an ECA and that ECA activity does not depend on a specific structure of the linker peptide.

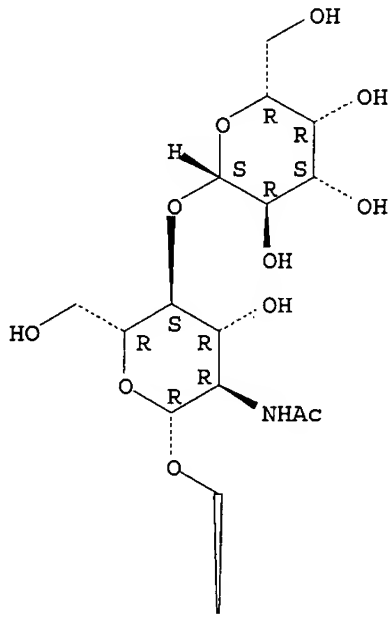
IT **107741-95-7**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(carbohydrate recognition domains of galectin-9 in relation to glycan recognition and eosinophil chemoattractant activity)

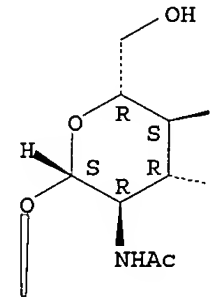
RN 107741-95-7 CAPLUS

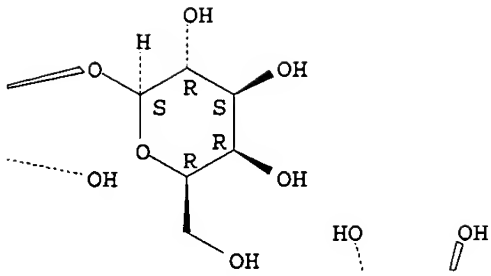
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.6)]-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

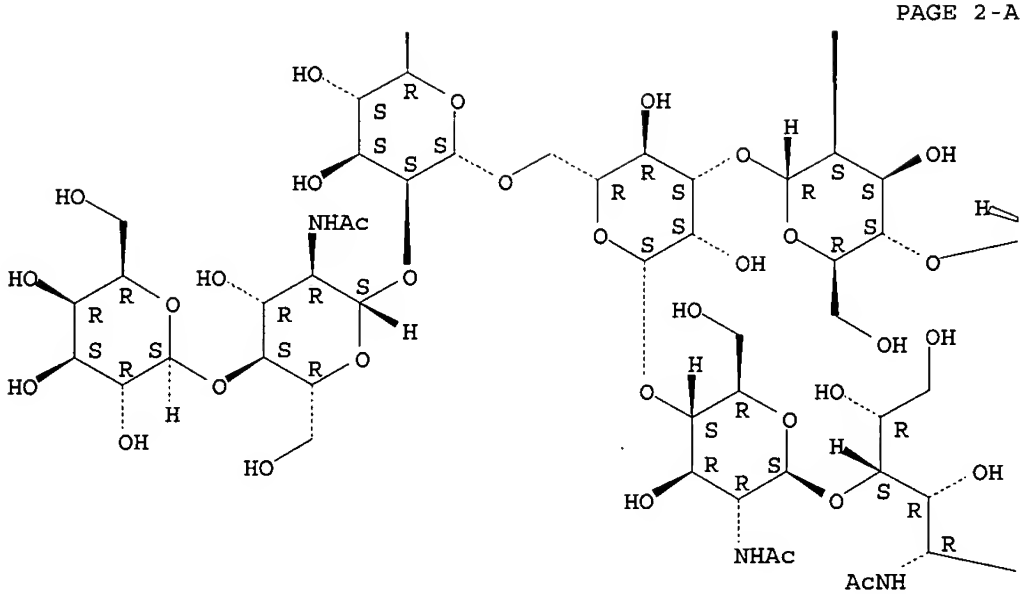
Absolute stereochemistry.

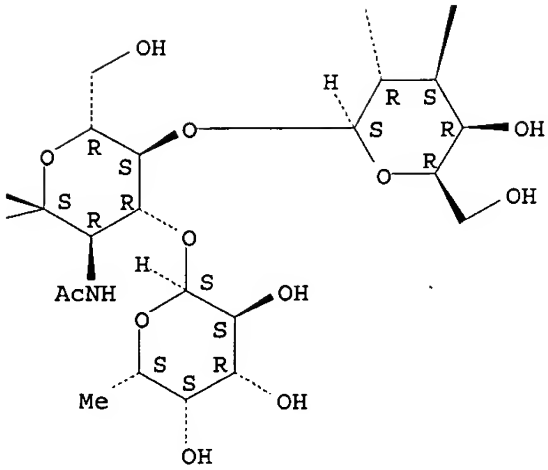
PAGE 1-A











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REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:111066 CAPLUS
DOCUMENT NUMBER: 134:349552
TITLE: Sugar binding properties of the two lectin domains of the tandem repeat-type galectin LEC-1 (N32) of Caenorhabditis elegans. Detailed analysis by an improved frontal affinity chromatography method
AUTHOR(S): Arata, Yoichiro; Hirabayashi, Jun; Kasai, Ken-Ichi
CORPORATE SOURCE: Department of Biological Chemistry, Faculty of Pharmaceutical Sciences, Teikyo University, Kanagawa, 199-0195, Japan
SOURCE: Journal of Biological Chemistry (2001), 276(5), 3068-3077
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The 32-kDa galectin (LEC-1 or N32) of the nematode Caenorhabditis elegans is the first example of a tandem repeat-type galectin and is composed of two domains, each of which is homologous to typical vertebrate 14-kDa-type galectins. To elucidate the biol. meaning of this unique structure contg. two probable sugar binding sites in one mol., we analyzed in detail the sugar binding properties of the two domains by using a newly improved frontal affinity chromatog. system. The whole mol. (LEC-1), the N-terminal lectin domain (Nh), and the C-terminal lectin domain (Ch) were expressed in Escherichia coli, purified, and immobilized on HiTrap gel agarose columns, and the extent of retardation of various sugars by the columns was measured. To raise the sensitivity of the system, we used 35 different fluorescence-labeled oligosaccharides (pyridylaminated (PA) sugars). All immobilized proteins showed affinity for N-acetyllactosamine-contg. N-linked complex-type sugar chains, and the binding was stronger for more branched sugars. Ch showed 2-5-fold stronger binding toward all complex-type sugars compared with Nh. Both Nh and Ch preferred Gal.beta.1-3GlcNAc to Gal.beta.1-4GlcNAc. Because the Fuc.alpha.1-2Gal.beta.1-3GlcNAc (H antigen) structure was found to interact with all immobilized protein columns significantly, the Kd value

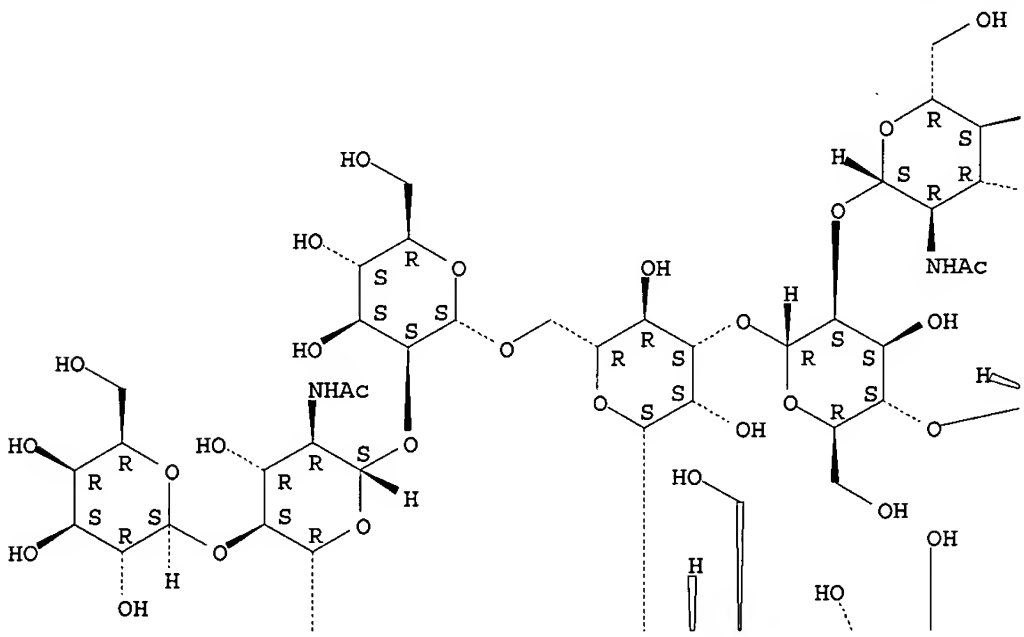
of **pentasaccharide** Fuc.alpha.1-2Gal.beta.1-3GlcNAc.beta.1-3Gal.beta.1-4Glc-PA for each column was detd. by analyzing the concn. dependence. Obtained values for immobilized LEC-1, Nh, and Ch were 6.0 .times. 10-5, 1.3 .times. 10-4, and 6.5 .times. 10-5 M, resp. The most significant difference between Nh and Ch was in their affinity for GalNAc.alpha.1-3(Fuc.alpha.1-2)Gal.beta.1-3GlcNAc.beta.1-3Gal.beta.1-4Glc-PA, which contains the blood group A antigen; the Kd value for immobilized Nh was 4.8 .times. 10-5 M, and that for Ch was 8.1 .times. 10-4 M. The present results clearly indicate that the two sugar binding sites of LEC-1 have different sugar binding properties.

IT **107741-94-6 107741-95-7**
RL: BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); PROC (Process)
(binding; sugar binding properties of the two lectin domains of the tandem repeat-type galectin LEC-1 (N32) of Caenorhabditis elegans)

RN 107741-94-6 CAPLUS

CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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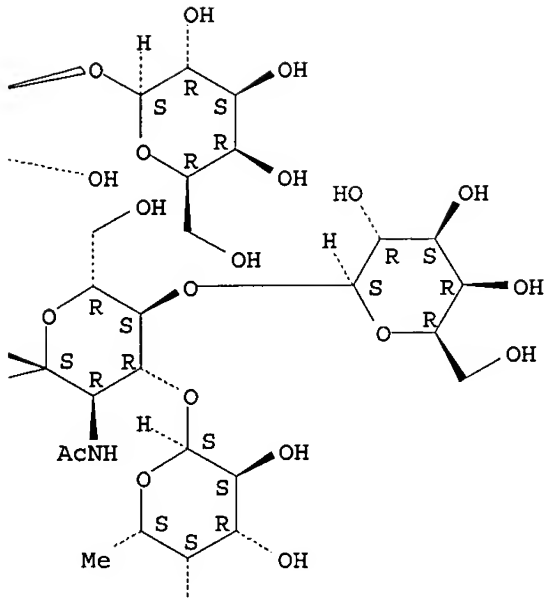

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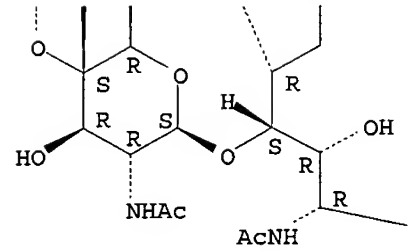


PAGE 2-B

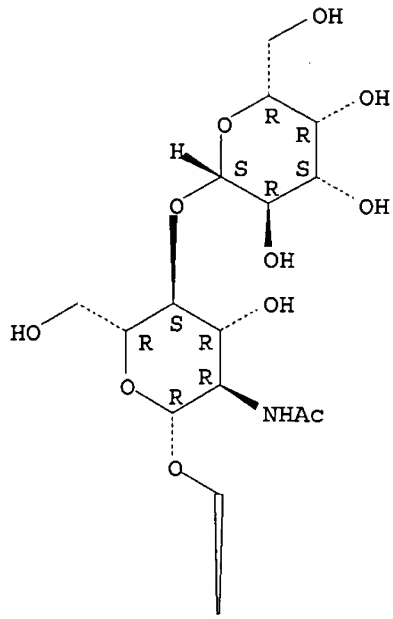
RN 107741-95-7 CAPLUS

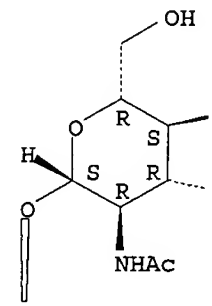
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.6)]-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-

.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A





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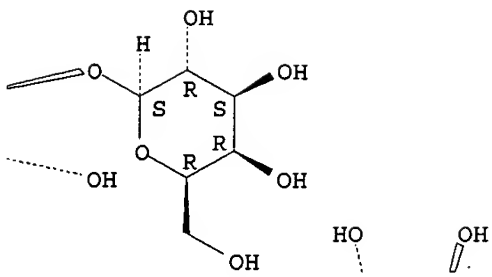

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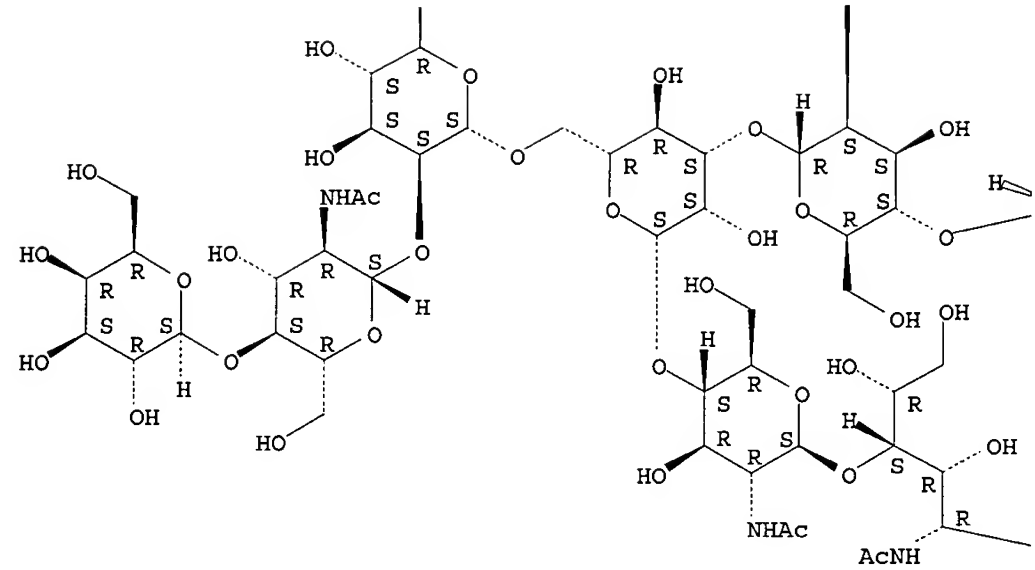

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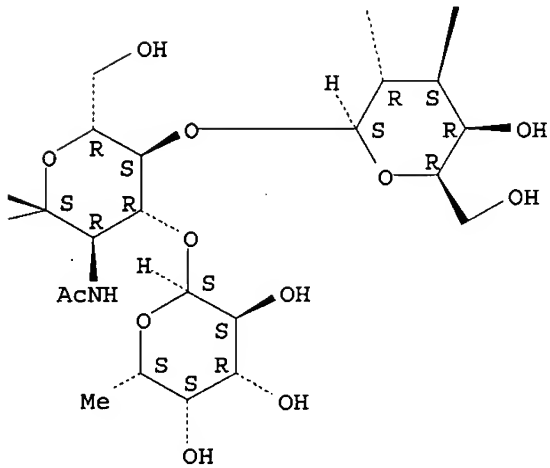
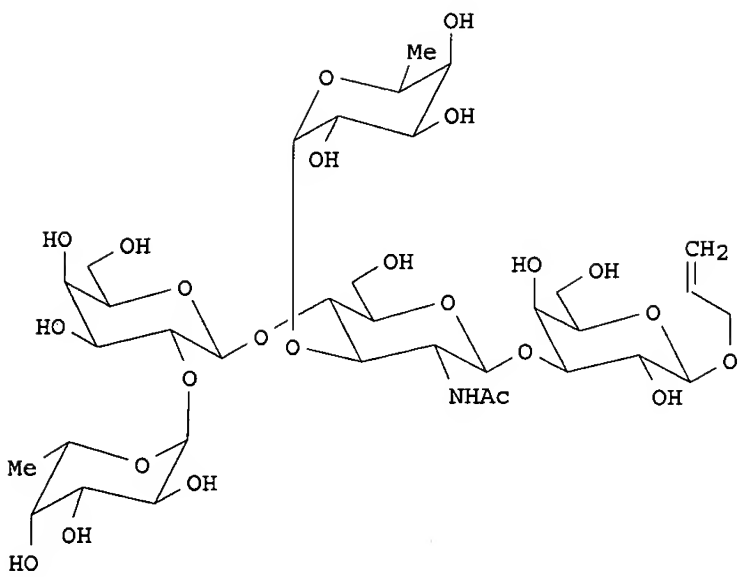


REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:62331 CAPLUS
DOCUMENT NUMBER: 122:31794
TITLE: Highly convergent synthesis of blood group determinant Lewisy in conjugate-forming form
AUTHOR(S): Behar, Victor; Danishefsky, Samuel J.
CORPORATE SOURCE: Department of Chemistry, Columbia University, New York, NY, 10027, USA
SOURCE: Angewandte Chemie (1994), 106(14), 1536-8 (See also Angew. Chem., Int. Ed. Engl., 1994, 33(14), 1468-70)
CODEN: ANCEAD; ISSN: 0044-8249

DOCUMENT TYPE: Journal
LANGUAGE: German
GI



I

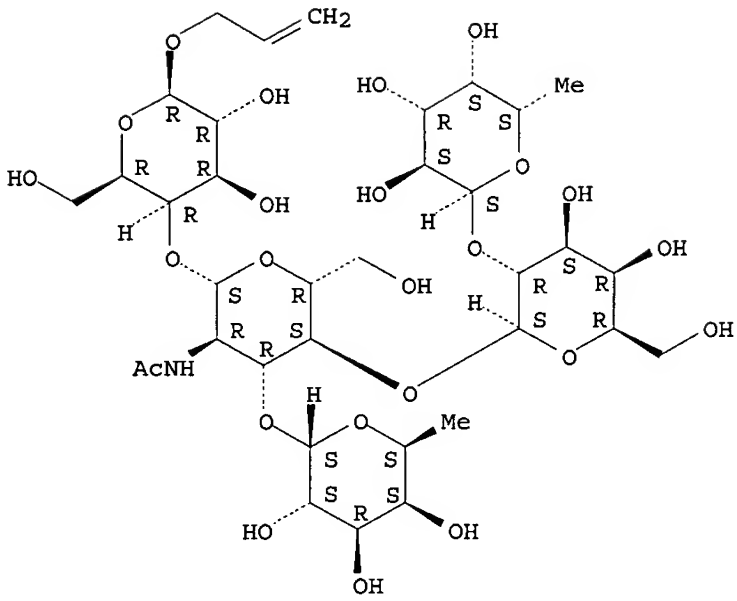
AB The title compd. I was prepd. by using glycals as both glycosyl donors and acceptors. I was oxidized to the aldehyde which bound to bovine serum albumin.

IT **159494-41-4P 159494-43-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of blood group determinant Lewisy using glycals as glycosyl donors and receptors)

RN 159494-41-4 CAPLUS

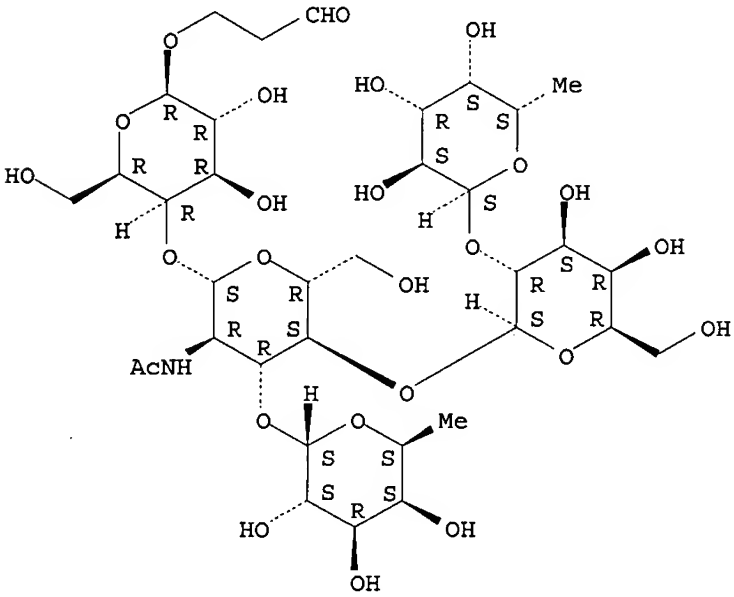
CN .beta.-D-Galactopyranoside, 2-propenyl O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.2)-.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 159494-43-6 CAPLUS
CN Propanal, 3-[[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[O-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.2)-.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-.beta.-D-galactopyranosyl]oxy]- (9CI) (CA INDEX NAME)

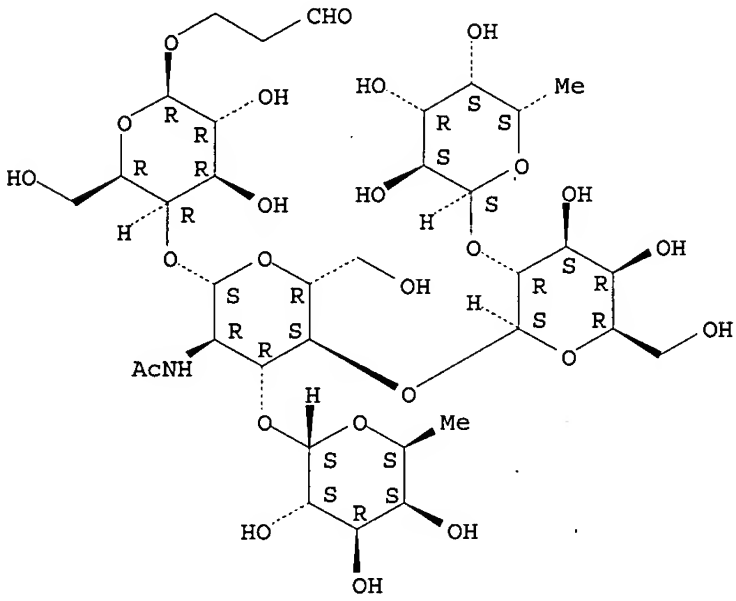
Absolute stereochemistry.



IT **159494-43-6DP**, albumin-bound
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of blood group determinant Lewisy using glycals as glycosyl donors and receptors)
RN 159494-43-6 CAPLUS
CN Propanal, 3-[[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[O-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.2)-.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-

(1.fwdarw.4)-.beta.-D-galactopyranosyl]oxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L29 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1987:435865 CAPLUS
DOCUMENT NUMBER: 107:35865
TITLE: Carbohydrate binding properties of complex-type oligosaccharides on immobilized Datura stramonium lectin
AUTHOR(S): Yamashita, Katsuko; Totani, Kazuhide; Ohkura, Takashi; Takasaki, Seiichi; Goldstein, Irwin J.; Kobata, Akira
CORPORATE SOURCE: Sch. Med., Kobe Univ., Kobe, 650, Japan
SOURCE: Journal of Biological Chemistry (1987), 262(4), 1602-7
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: English

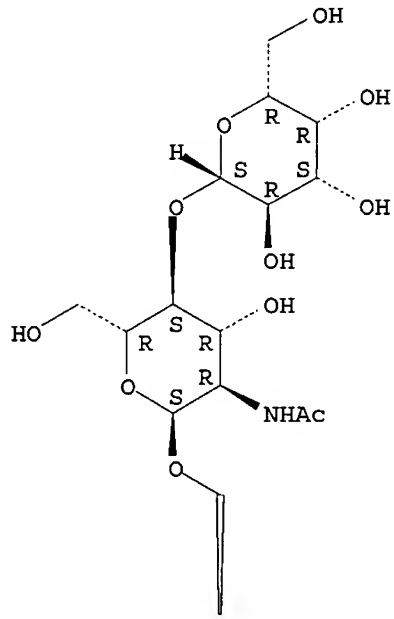
AB The carbohydrate binding specificity of D. stramonium agglutinin was studied by analyzing the behavior of a variety of complex-type oligosaccharides on a D. stramonium agglutinin-Sepharose column. Oligosaccharides that contain Gal.beta.1.fwdarw.4GlcNAc-.beta.1.fwdarw.4(Gal.beta.1.fwdarw.4GlcNAc.beta.1.fwdarw.2)Man units are retarded in the column so long as the **pentasaccharide** unit is not substituted by other sugars. Oligosaccharides that contain unsubstituted Gal.beta.1.fwdarw.4GlcNAc.beta.1.fwdarw.6(Gal.beta.1.fwdarw.4GlcNAc.beta.1.fwdarw.2)Man groups and those in which there is at least 1 Gal.beta.1.fwdarw.4GlcNAc repeating unit present on an outer chain bind to the column and are eluted with buffer contg. N-acetylglucosamine oligomers. Binding was not affected by the inner core portion of complex oligosaccharides nor by the presence of a bisecting N-acetylglucosamine residue. The column can be used as an effective tool for the anal. of complex-type, asparagine-linked sugar chains.

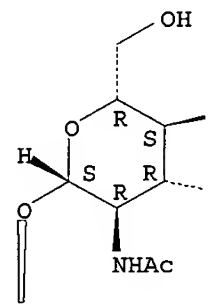
IT **107691-47-4 107691-48-5 107741-94-6 107741-95-7**
RL: ANST (Analytical study)
(sepn. of, on Datura stramonium agglutinin-Sepharose, binding specificity in relation to)

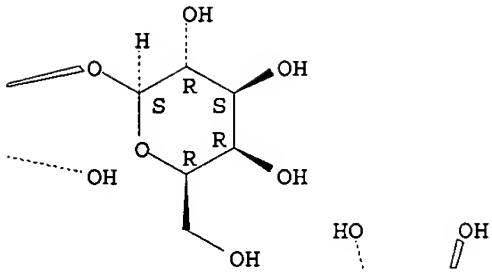
RN 107691-47-4 CAPLUS
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-

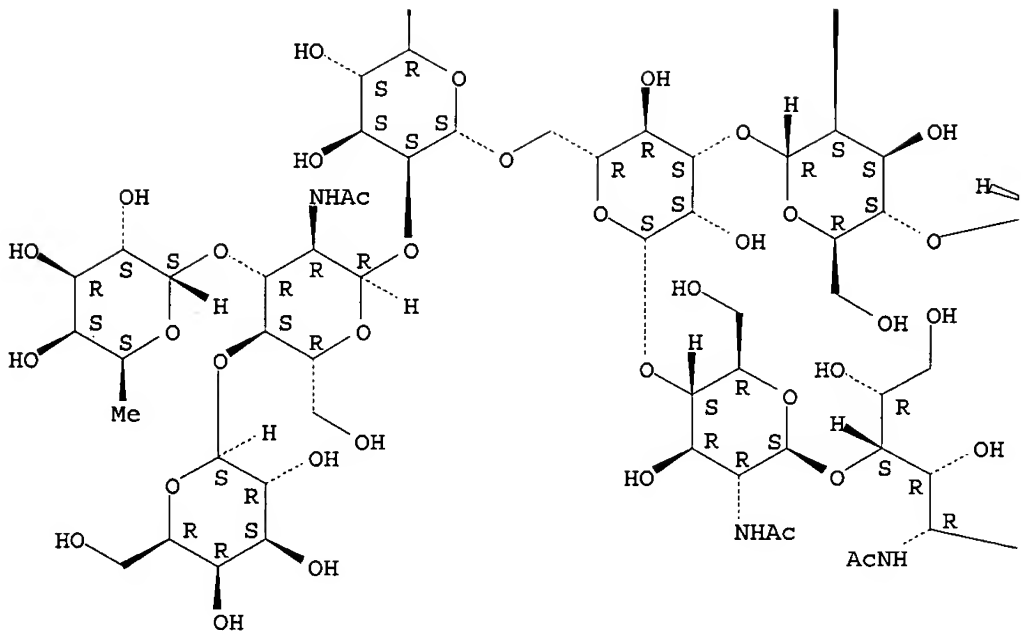
galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.6)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.6)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)]-.alpha.-D-mannopyranosyl-(1.fwdarw.3)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

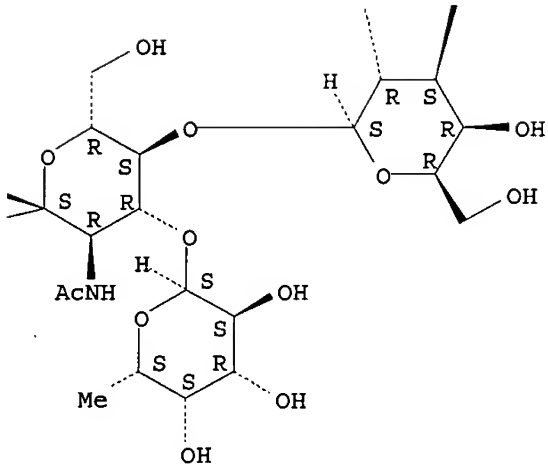
Absolute stereochemistry.











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RN 107691-48-5 CAPLUS

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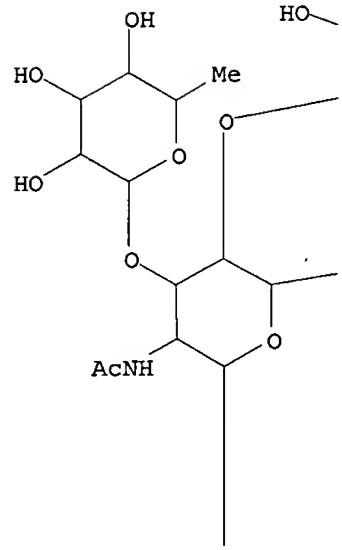
PAGE 1-A



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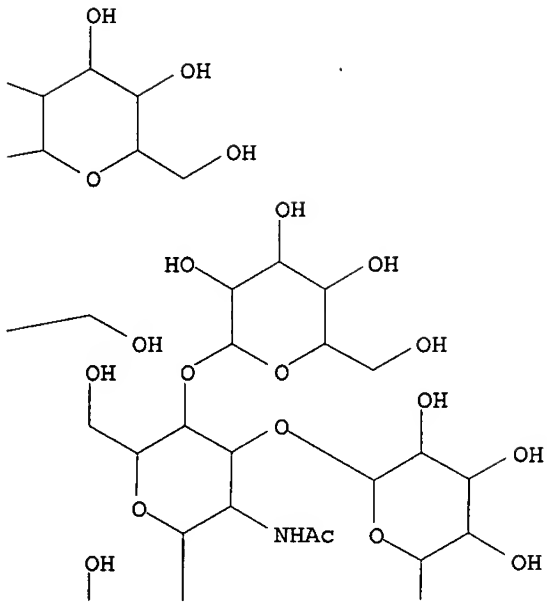

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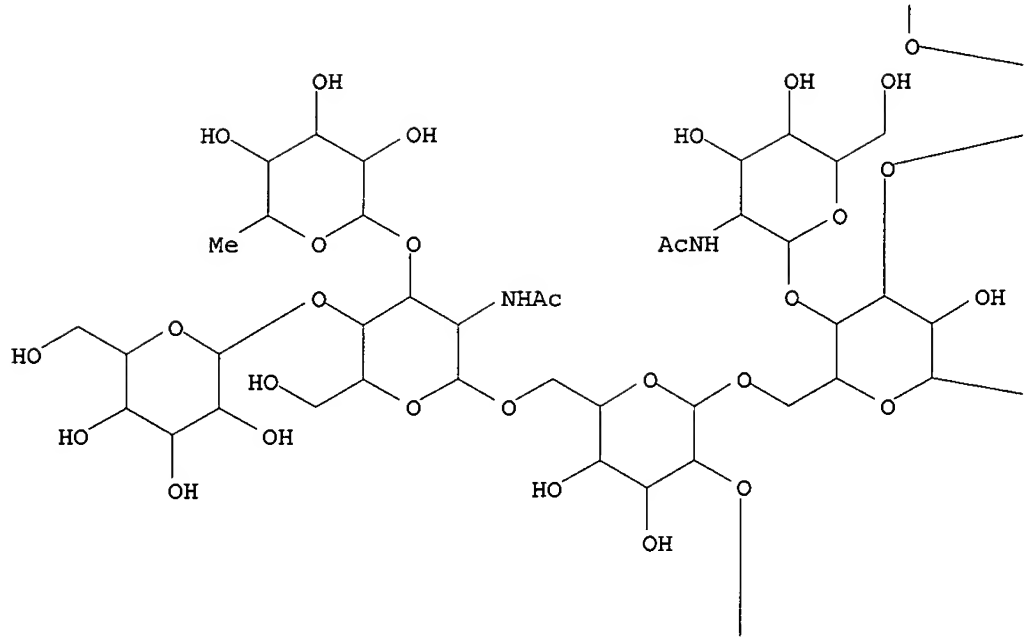

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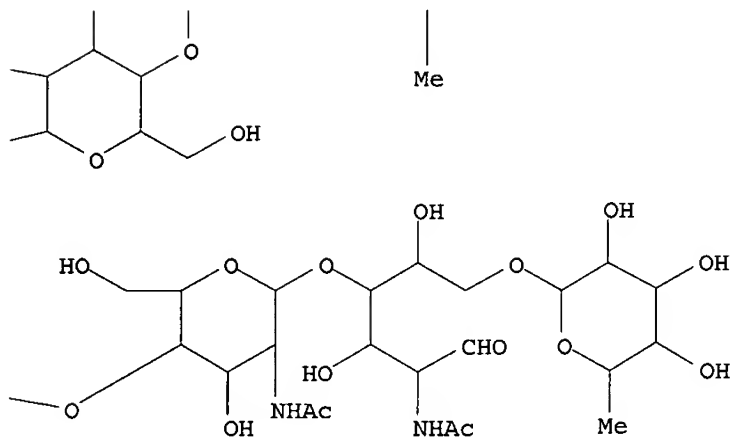
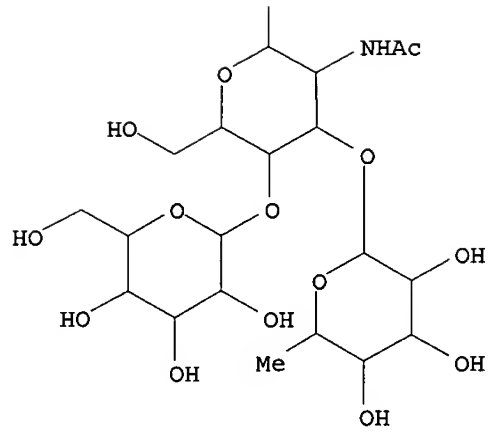


PAGE 3-A



RN 107741-94-6 CAPLUS
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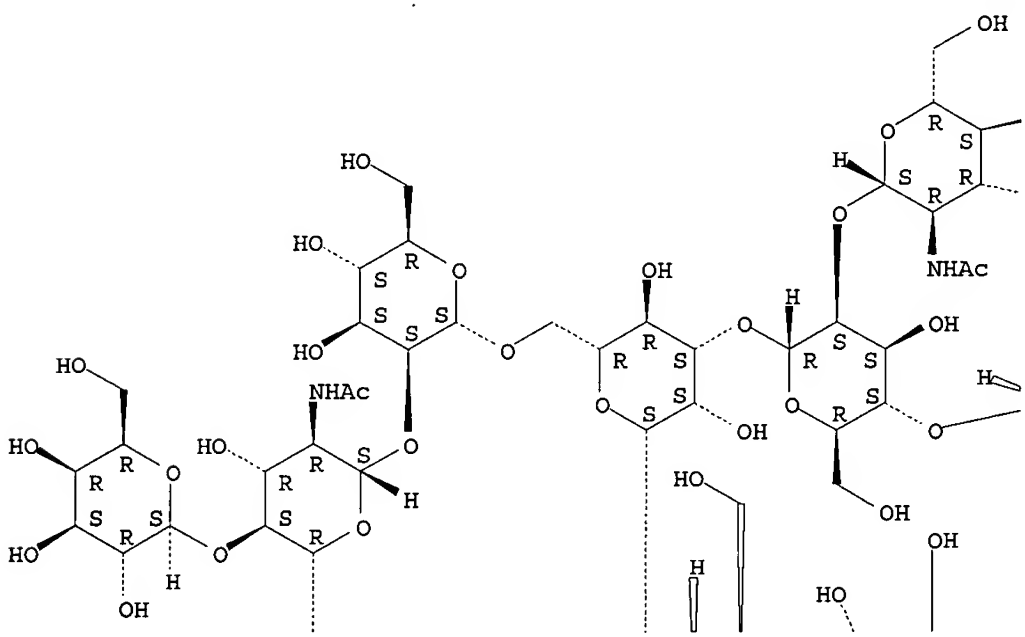
Absolute stereochemistry.

PAGE 1-A



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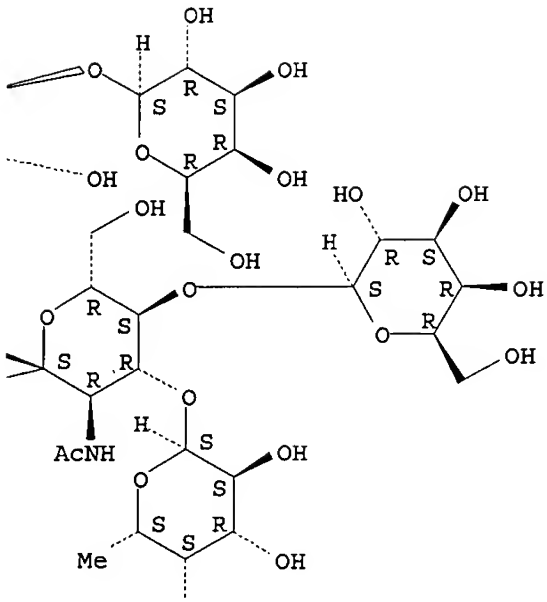

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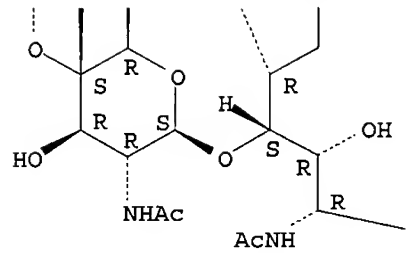

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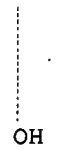

RN 107741-95-7 CAPLUS

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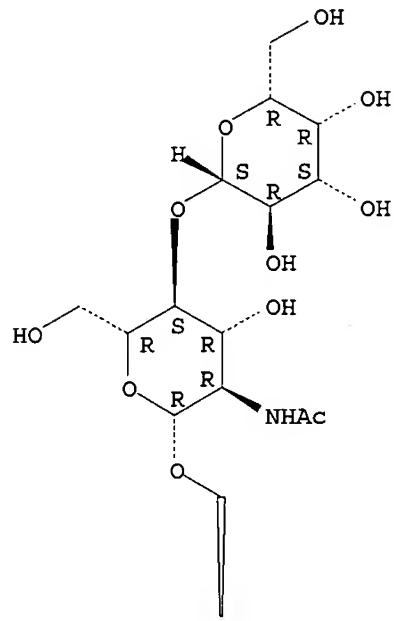
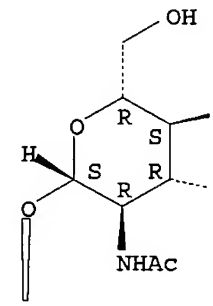
.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A





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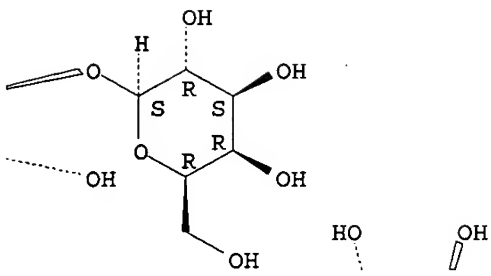

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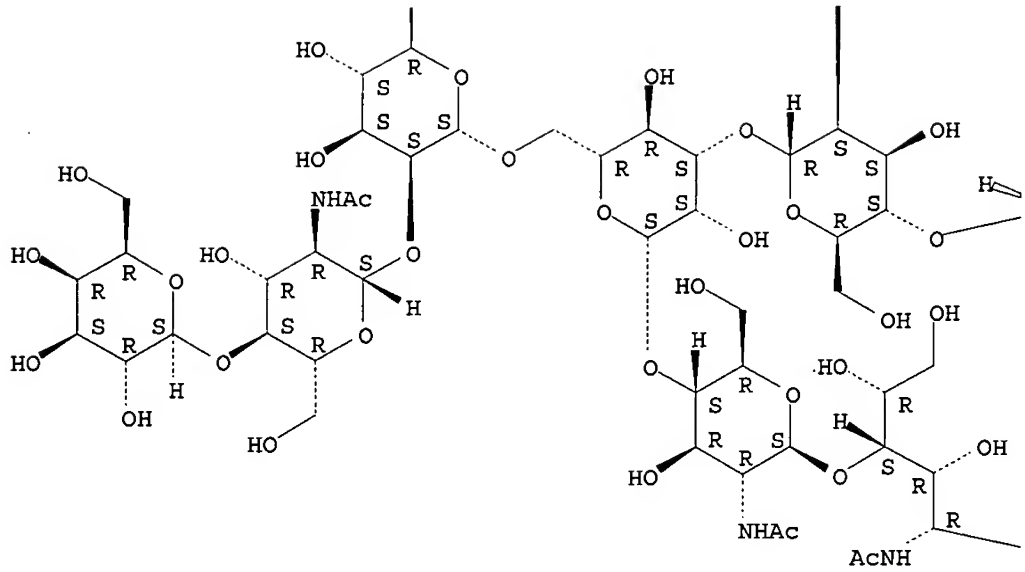

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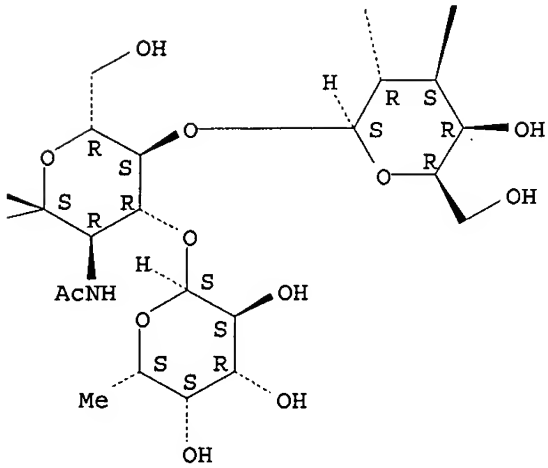

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L3             1 S L1 SSS FULL
L4               STRUCTURE UPLOADED
L5             2 S L4 SSS SAM
L6           102 S L4 SSS FULL
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L11            0 S L7 AND PENTASACCHARIDES
L12            6 S L7 AND PENTASACCHARIDE
L13            4 S L7 AND L-FUCOSE
L14            2 S L7 AND L-FUCOSYL
L15            0 S L7 AND L-GALACTOPYRANOSYL
L16            0 S L7 AND ?GALACTOPYRANOSYL
L17            0 S L7 AND ?GALACTOPYRANOSYL?
L18            0 S L7 AND L-GALACTOPYRANOSYL?
L19            0 S L7 AND O-6-DEOXY-.ALPHA.-L-GALACTOPYRANOSYL-
L20            0 S L7 AND .ALPHA.-L-GALACTOPYRANOSYL-
L21            0 S L7 AND HEXASACCHARIDES
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L29            4 S L25 AND PENTASACCHARIDE

=> s l25 and hexasaccharide
            62 L25
           813 HEXASACCHARIDE
           302 HEXASACCHARIDES
          1014 HEXASACCHARIDE
                 (HEXASACCHARIDE OR HEXASACCHARIDES)
L30            0 L25 AND HEXASACCHARIDE

=> s l25 and hexasaccharides
            62 L25
           302 HEXASACCHARIDES
L31            0 L25 AND HEXASACCHARIDES

=> s l25 and heptasaccharides
            62 L25
            90 HEPTASACCHARIDES
L32            0 L25 AND HEPTASACCHARIDES

=> s l25 and octasaccharides
            62 L25
           119 OCTASACCHARIDES
L33            0 L25 AND OCTASACCHARIDES

=> s l25 and fucosyltransferase
            62 L25
          1372 FUCOSYLTRANSFERASE
           385 FUCOSYLTRANSFERASES
          1433 FUCOSYLTRANSFERASE
                 (FUCOSYLTRANSFERASE OR FUCOSYLTRANSFERASES)
L34            7 L25 AND FUCOSYLTRANSFERASE

=> d l34 1-7 ibib abs hitstr

L34  ANSWER 1 OF 7  CAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:         2002:493053  CAPLUS
```

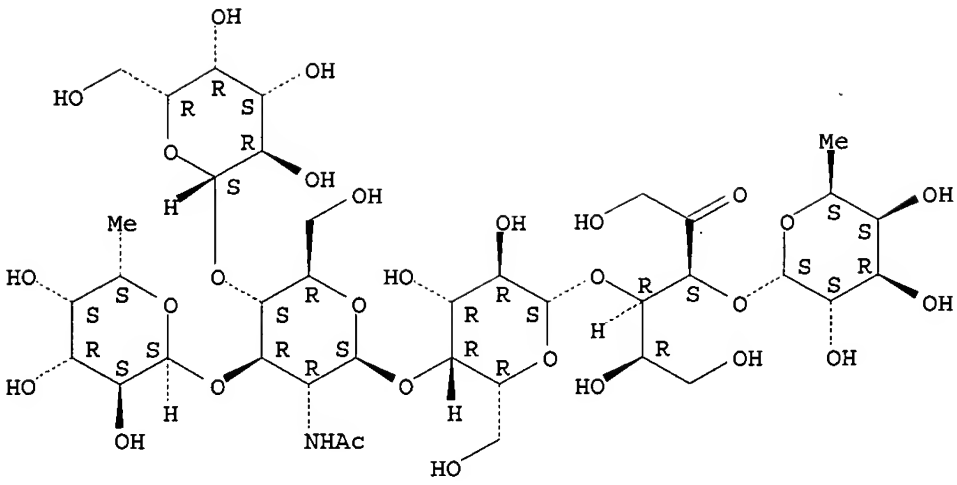
DOCUMENT NUMBER: 138:105654
TITLE: In vivo fucosylation of lacto-N-neotetraose and lacto-N-neohexaose by heterologous expression of Helicobacter pylori .alpha.-1,3 **fucosyltransferase** in engineered Escherichia coli
AUTHOR(S): Dumon, Claire; Priem, Bernard; Martin, Steve L.; Heyraud, Alain; Bosso, Claude; Samain, Eric
CORPORATE SOURCE: Centre de Recherches sur les Macromolecules Vegetales, Grenoble, 38041, Fr.
SOURCE: Glycoconjugate Journal (2001), 18(6), 465-474
CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We report here the in vivo prodn. of type 2 fucosylated-N-acetyllactosamine oligosaccharides in Escherichia coli. Lacto-N-neofucopentaose (Gal.beta.1-4GlcNAc.beta.1-3Gal.beta.1-4(Fuc.alpha.1-3)Glc), lacto-N-neodifucohexaose (Gal.beta.1-4(Fuc.alpha.1-3)Glc-NAc.beta.1-3Gal.beta.1-4(Fuc.alpha.1-3)Glc), and lacto-N-neodifucooctaose (Gal.beta.1-4GlcNAc.beta.1-3Gal.beta.1-4(Fuc.alpha.1-3)GlcNAc.beta.1-3Gal.beta.1-4(Fuc.alpha.1-3)Glc) were produced from lactose added in the culture medium. Two of them carry the Lewis X human antigen. High cell d. cultivation allowed obtaining several grams of fucosylated oligosaccharides per L of culture. The fucosylation reaction was catalyzed by an .alpha.-1,3 **fucosyltransferase** of Helicobacter pylori overexpressed in E. coli with the genes lgtAB of N. meningitidis. The strain was genetically engineered in order to provide GDP-fucose to the system, by genomic inactivation of gene wcaJ involved in colanic acid synthesis and overexpression of RcsA, pos. regulator of the colanic acid operon. To prevent fucosylation at the glucosyl residue, lactulose Gal.beta.1-4Fru was assayed in replacement of lactose. Lactulose-derived oligosaccharides carrying fucose were synthesized and characterized. Fucosylation of the fructosyl residue was obsd., indicating a poor acceptor specificity of the **fucosyltransferase** of H. pylori.

IT **468083-11-6P**
RL: BMF (Bioindustrial manufacture); PRP (Properties); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(in vivo fucosylation of lacto-N-neotetraose and lacto-N-neohexaose by heterologous expression of Helicobacter pylori .alpha.-1,3 **fucosyltransferase** in engineered Escherichia coli)

RN 468083-11-6 CAPLUS
CN D-Fructose, 0-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-0-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-0-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-0-.beta.-D-galactopyranosyl-(1.fwdarw.4)-0-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:239442 CAPLUS
DOCUMENT NUMBER: 137:5041
TITLE: An engineered biocatalyst for the synthesis of glycoconjugates: utilization of .beta.1,3-N-acetyl-D-glucosaminyltransferase from Streptococcus agalactiae type Ia expressed in Escherichia coli as a fusion with maltose-binding protein
AUTHOR(S): Toda, Atsushi; Yamada, Kuriko; Nishimura, Shin-Ichiro
CORPORATE SOURCE: Sapporo Laboratory for Glycocluster Project, Japan Bioindustry Association, Hokkaido University, Sapporo, 060-0810, Japan
SOURCE: Advanced Synthesis & Catalysis (2002), 344(1), 61-69
CODEN: ASCAF7; ISSN: 1615-4150
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 137:5041

AB A fusion protein composed of .beta.1,3-N-acetyl-D-glucosaminyltransferase (.beta.1,3-GlcNAcT) from Streptococcus agalactiae type Ia and maltose-binding protein (MBP) was produced in Escherichia coli as a sol. and highly active form. Although this fusion protein (MBP-.beta.1,3-GlcNAcT) did not show any sugar-elongation activity to some simple low-mol. wt. acceptor substrates such as galactose, Gal.beta.(1.fwdarw.4)Glc (lactose), Gal.beta.(1.fwdarw.4)GlcNAc (N-acetyllactosamine), Gal.beta.(1.fwdarw.4)GlcNAc.beta.(1.fwdarw.3)Gal.beta.(1.fwdarw.4)Glc (lacto-N-tetraose), and Gal.beta.(1.fwdarw.4)Glc.beta.Cer (lactosylceramide, LacCer), the multivalent glycopolymer having LacCer-mimic branches (LacCer mimic polymer, LacCer primer) was found to be an excellent acceptor substrate for the introduction of a .beta.-GlcNAc residue at the O-3 position of the non-reducing galactose moiety by this engineered enzyme. Subsequently, a polymer having GlcNAc.beta.(1.fwdarw.3)Gal.beta.(1.fwdarw.4)Glc was subjected to further enzymic modifications by using recombinant .beta.1,4-D-galactosyltransferase (.beta.1,4-GalT), .alpha.2,3-sialyltransferase (.alpha.2,3-SiaT), .alpha.1,3-L-**fucosyltransferase** (.alpha.1,3-FucT), and ceramide glycanase (CGase) to afford a biol. important ganglioside; Neu5A.alpha.(2.fwdarw.3)Gal.beta.(1.fwdarw.4)[Fuc.alpha.(1.fwdarw.3)]GlcNAc.beta.(1.fwdarw.3)Gal.beta.(1.fwdarw.4)GlcCer.alpha.(IV3Neu5Ac.alpha.,III3Fuc.alpha.-nLc4Cer) in 40% yield (4 steps). Interestingly, it was suggested that MBP-.beta.1,3-GlcNAcT could also

catalyze a glycosylation reaction of the LacCer mimic polymer with N-acetyl-D-galactosamine served from UDP-GalNAc to afford a polymer carrying trisaccharide branches, GalNAc.beta.(1.fwdarw.3)Gal.beta.(1.fwdarw.4)Glc. The versatility of the MBP-.beta.1,3-GlcNAcT in the practical synthesis was preliminarily demonstrated by applying this fusion protein as an immobilized biocatalyst displayed on an amylose resin which is known as a solid support showing potent binding-affinity with MBP.

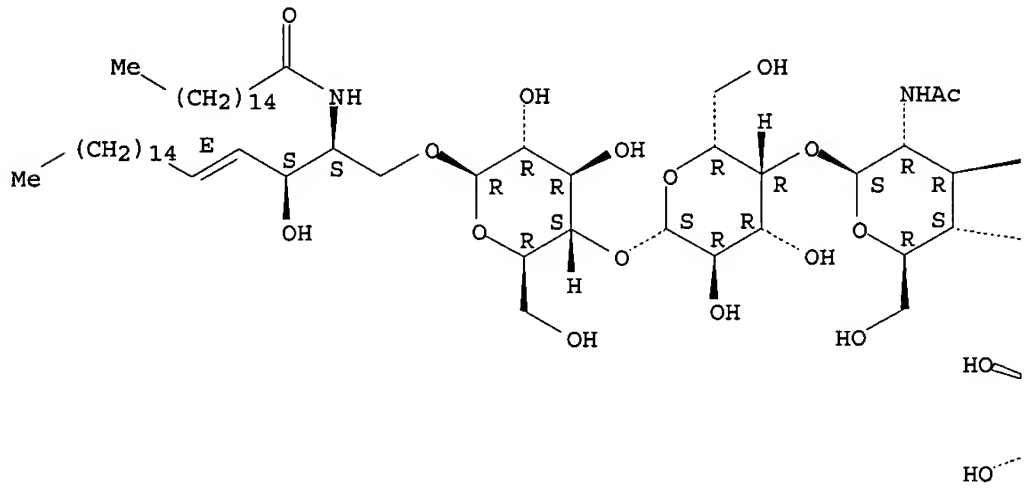
IT **431079-44-6P**
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(synthesis of glycoconjugates with .beta.1,3-N-acetyl-D-glucosaminyltransferase fusion with maltose-binding protein)

RN 431079-44-6 CAPLUS

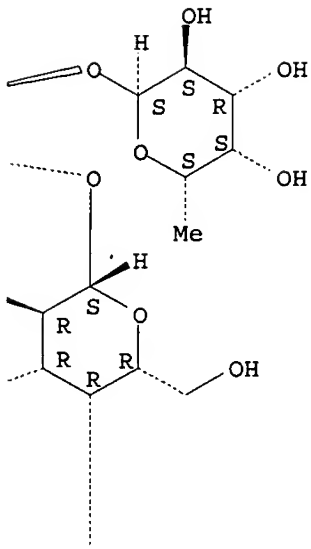
CN Hexadecanamide, N-[(1S,2S,3E)-1-[[[O-(N-acetyl-.alpha.-neuraminosyl)-(2.fwdarw.4)-O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-.beta.-D-galactopyranosyl-(1.fwdarw.4)-.beta.-D-glucopyranosyl]oxy]methyl]-2-hydroxy-3-nonadecenyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



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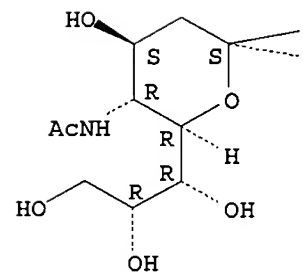
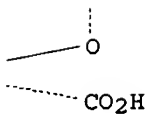


PAGE 2-B



REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2001:247347 CAPLUS
DOCUMENT NUMBER: 134:252586
TITLE: Preparation of acetamidodeoxy fucosylated oligosaccharides via enzymic glycosidation reaction
INVENTOR(S): Natunen, Jari
PATENT ASSIGNEE(S): Carbion Oy, Finland
SOURCE: PCT Int. Appl., 43 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001023398	A1	20010405	WO 2000-FI803	20000921
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GW, ML, MR, NE, SN, TD, TG				
FI 9902070	A	20010328	FI 1999-2070	19990928
EP 1228079	A1	20020807	EP 2000-960731	20000921
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
JP 2003510330	T2	20030318	JP 2001-526548	20000921

PRIORITY APPLN. INFO.: FI 1999-2070 A 19990928
WO 2000-FI803 W 20000921

OTHER SOURCE(S): CASREACT 134:252586
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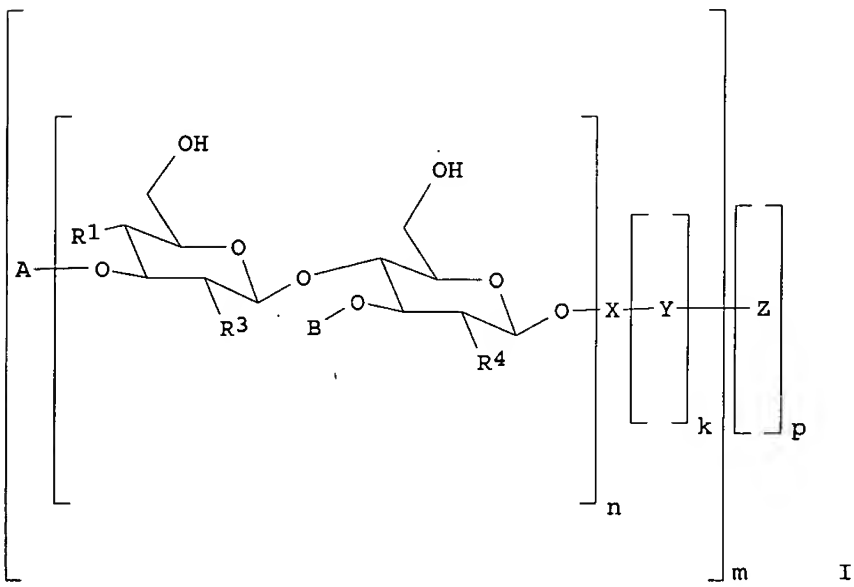


I

AB The present invention relates to a process for the enzymic glycosidation in prepn. of oligosaccharides or oligosaccharide contg. compds., esp. N-acetyl-chitooligosaccharides having a fucosylated monosaccharide I, wherein A is H or a glycosidically .beta.1-3 linked D-glucopyranosyl residue, R1 is OH, R2 is H and R3 is OH or acylamido, -NH-acyl or R1 is H, R2 is OH and R3 is acetamido -NHCOCH3, B is H, or an .alpha.-L-fucosyl or an .alpha.-L-fucosyl analog, and R4 is OH or acetamido -NHCOCH3, n is 1 to 100, with the proviso that there is always at least one .alpha.-fucosyl or .alpha.-fucosyl analogs group present in the mol., p and k are 0 and m is 1, in which case X is H, an aglycon residue or a monosaccharide selected

from the group consisting of Glc, GlcNAc, Gal or GalNAc, optionally in reduced form, or oligosaccharide contg. one or more of said monosaccharide units linked to saccharide X, when n is 1, or p is 1, k is 0 or 1 and 1 < m < 1000, in which case X is a straight bond, or a mono- or oligosaccharide as defined under, Y is a spacer or linking group capable of linking the saccharide or X to Z, and Z is a mono- or polyvalent carrier mol. The invention also relates to novel oligosaccharides or oligosaccharide contg. compds., esp. N-acetyl-chitooligosaccharides, which are fucosylated and optionally covalently bound to a carrier mol. Thus, human **fucosyltransferase** V-catalyzed glycosidation of N-acetyl-chitotriose and GDP-fucose gave the corresponding fucosylated N-acetyl-chitotriose in 67% yield.

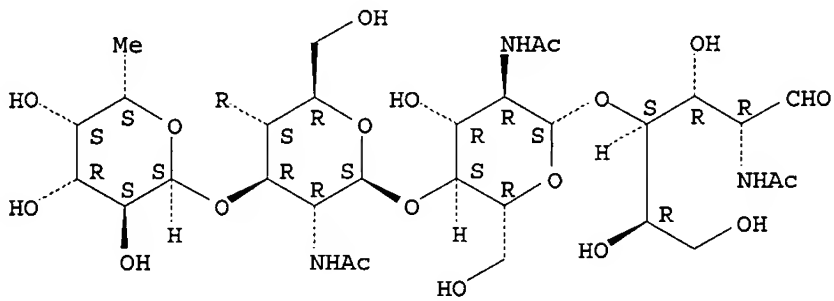
IT **331638-57-4P 331638-62-1P**
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. of acetamidodeoxy fucosylated oligosaccharides via enzymic glycosidation reaction)

RN 331638-57-4 CAPLUS

CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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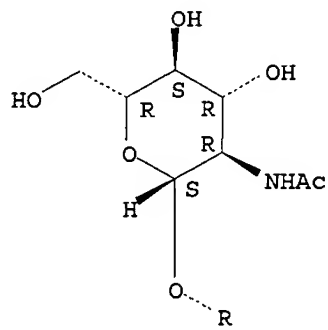


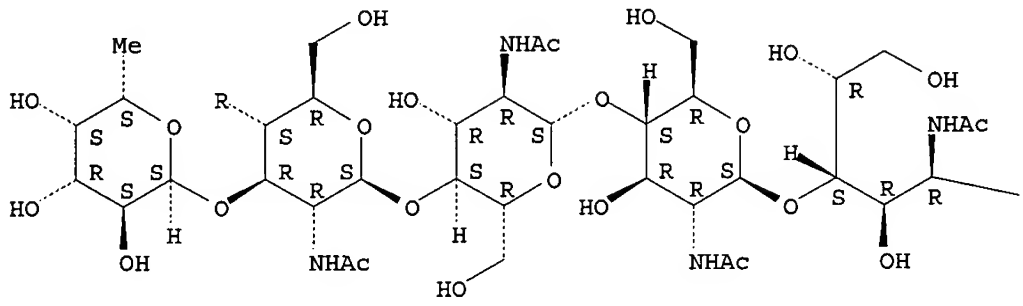
RN 331638-62-1 CAPLUS

CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-

glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

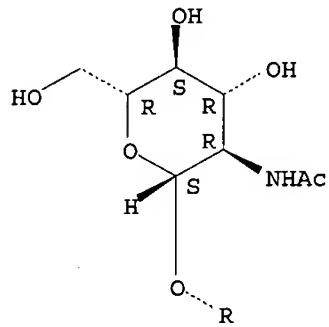
PAGE 1-A



PAGE 1-B

—CHO

PAGE 2-A



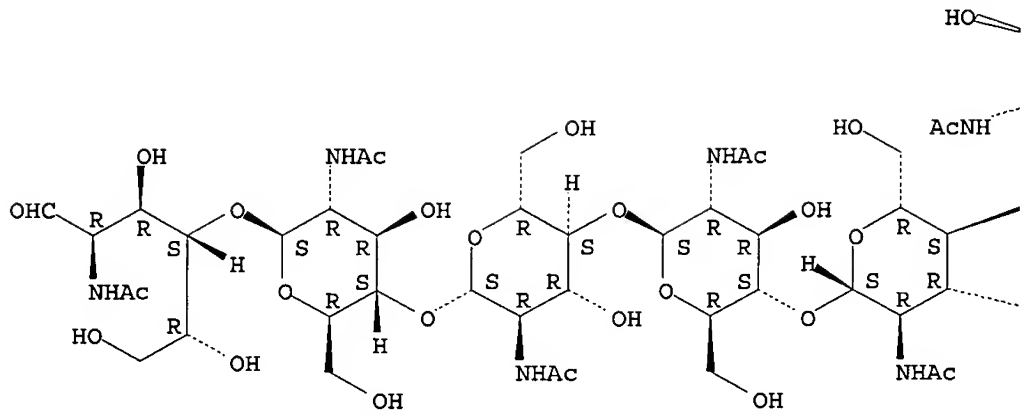
IT **331638-60-9P**
RL: BPN (Biosynthetic preparation); RCT (Reactant); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of acetamidodeoxy fucosylated oligosaccharides via enzymic glycosidation reaction)

RN 331638-60-9 CAPLUS

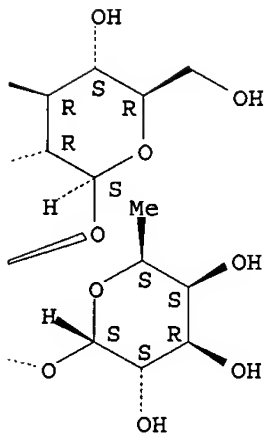
CN D-Glucose, O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:150793 CAPLUS

DOCUMENT NUMBER: 130:348917

TITLE: In vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human **fucosyltransferases** III and VI

AUTHOR(S): Nimtz, Manfred; Grabenhorst, Eckart; Gambert, Ulrike; Costa, Julia; Wray, Victor; Morr, Michael; Thiem, Joachim; Conradt, Harald S.

CORPORATE SOURCE: Gesellschaft fur Biotechnologische Forschung, Braunschweig, 38124, Germany

SOURCE: Glycoconjugate Journal (1998), 15(9), 873-883
CODEN: GLJOEW; ISSN: 0282-0080

PUBLISHER: Kluwer Academic Publishers

DOCUMENT TYPE: Journal
LANGUAGE: English

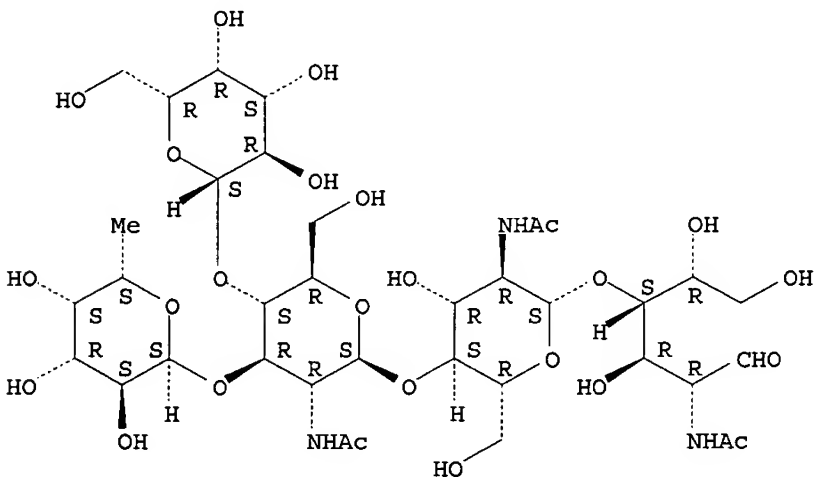
AB Transgalactosylation of chitobiose and chitotriose employing .beta.-galactosidase from bovine testes yielded mixts. with .beta.1-3 linked galactose (type I) and .beta.1-4 linked galactose (type II) in a final ratio of 1:1 for the tri- and 1:1.4 for the tetrasaccharide. After 24 h incubations of the two purified oligosaccharide mixts. with large amts. (20-fold increase compared with std. conditions) of human .alpha.1, 3/4-**fucosyltransferase** III (FucT III), the type I tri-/tetrasaccharides were completely converted to the Lewisa structure, whereas approx. 10% fucosylation of the type II isomers to the Lewisx oligosaccharides was obsd. in long-term incubations. Employing large amts. of human .alpha.1, 3-**fucosyltransferase** VI (FucT VI), the type I trisaccharide substrate was exclusively fucosylated at the proximal 0-4 substituted N-acetylglucosamine (GlcNAc) (20%) whereas almost all of the type II isomers was converted to the corresponding Lewisx product. 45% Of the type I tetrasaccharide was fucosylated at the second GlcNAc solely by FucT VI. The type II isomer was almost completely .alpha.1-3 fucosylated to yield the Lewisx deriv. with traces of a structure that contained an addnl. fucose at the reducing GlcNAc. The results obtained in the present study employing high amts. of enzyme confirmed our previous results that FucT III acts preponderantly as a .alpha.1-4 **fucosyltransferase** onto GlcNAc in vitro. Human FucT VI attaches fucose exclusively in an .alpha.1-3 linkage to 4-substituted GlcNAc in vitro and does not modify any 3-substituted GlcNAc to yield Lewisa oligosaccharides. With 8-methoxycarbonyl-octyl glycoside acceptors used under std. conditions, FucT III acts exclusively on the type I and FucT VI only on the type II deriv. With lacto-N-tetraose, lacto-N-fucopentraose I, or LS-tetrasaccharide as substrates, FucT III modified the 3-substituted GlcNAc and the reducing glucose; FucT VI recognized only lacto-N-neotetraose as a substrate.

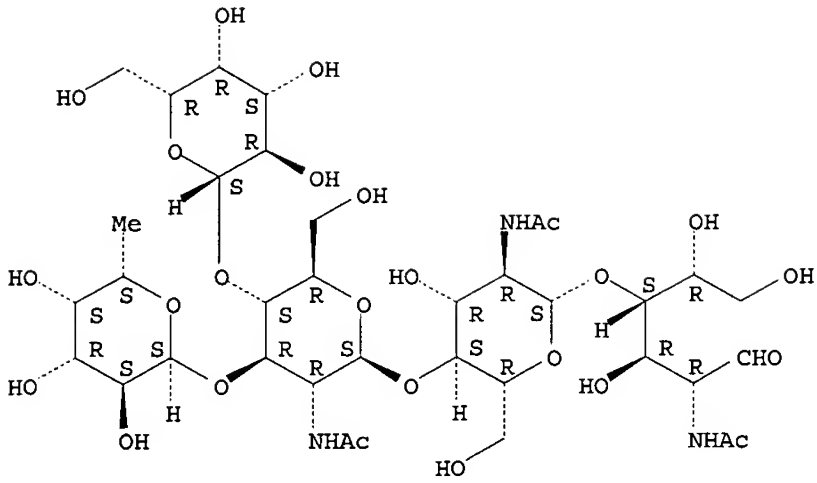
IT **225089-62-3**
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(in vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human **fucosyltransferases** III and VI)

RN 225089-62-3 CAPLUS

CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.





REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1998:353191 CAPLUS
DOCUMENT NUMBER: 129:65299
TITLE: Novel Branched Nod Factor Structure Results from .alpha.-(1.fwdarw.3) Fucosyl Transferase Activity: The Major Lipo-Chitin Oligosaccharides from Mesorhizobium loti Strain NZP2213 Bear an .alpha.-(1.fwdarw.3) Fucosyl Substituent on a Nonterminal Backbone Residue
AUTHOR(S): Olsthoorn, Maurien M. A.; Lopez-Lara, Isabel M.; Petersen, Bent O.; Bock, Klaus; Haverkamp, Johan; Spaink, Herman P.; Thomas-Oates, Jane E.
CORPORATE SOURCE: Department of Mass Spectrometry Bijvoet Center for Biomolecular Research Faculty of Chemistry, Utrecht University, Utrecht, 3584 CA, Neth.
SOURCE: Biochemistry (1998), 37(25), 9024-9032
CODEN: BICHAW; ISSN: 0006-2960
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Mesorhizobium loti has been described as a microsymbiont of plants of the genus Lotus. Lipo-chitin oligosaccharides (LCOs), or Nod factors, produced by several representative M. loti strains all have similar structures. Using fast-atom-bombardment tandem mass spectrometry and NMR spectroscopy, the authors have now examd. the LCOs from the type strain NZP2213 and obsd. a much greater variety of structures than has been described for the strains of M. loti studied previously. Interestingly, the major LCO was identified a structure that bears a fucose residue .alpha.-1,3-linked to the GlcNAc residue proximal to the nonreducing terminal GlcNAc residue. This is the first time, to the authors' knowledge, that substitution on an internal GlcNAc residue of the LCO backbone has been obsd. This novel LCO structure suggests the presence of a novel **fucosyltransferase** activity in strain NZP2213. Since the presence of this extra structure does not have the effect of broadening the host range, it is suggested that the modification of the LCOs with a fucose residue linked to a nonterminal GlcNAc residue might provide protection against degrdn. by a particular host plant enzyme (e.g., a chitinase) or alternatively represents adaptation to a particular host-specific receptor. The action of the .alpha.-(1.fwdarw.3) **fucosyltransferase** seems to reduce significantly the activity of NodS, the methyltransferase involved in the addn. of the N-Me substituent to the nonreducing terminal GlcNAc residue. An addnl. novel LCO structure

has been identified having only a GlcNAc2 backbone. This is the first known description of such a minimal LCO structure.

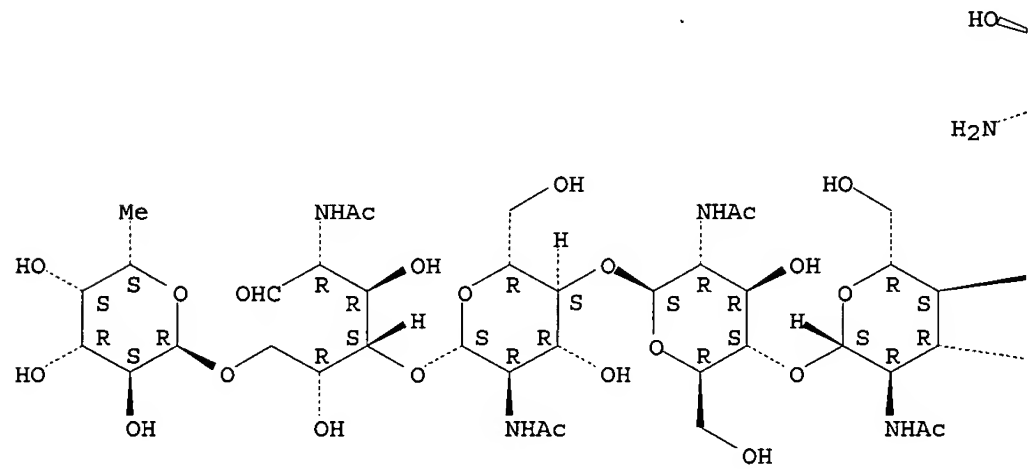
IT **208832-95-5D**, fatty acylated **208832-96-6D**, fatty acylated
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(novel branched lipochitooligosaccharides as Nod factors resulting from .alpha.-(1.fwdarw.3)-**fucosyltransferase** activity in Mesorhizobium loti)

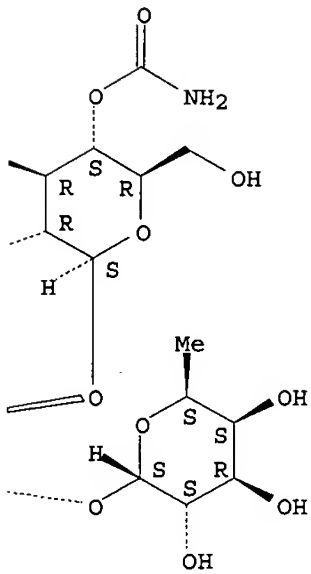
RN 208832-95-5 CAPLUS

CN D-Glucose, O-2-amino-4-O-(aminocarbonyl)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.6)]-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

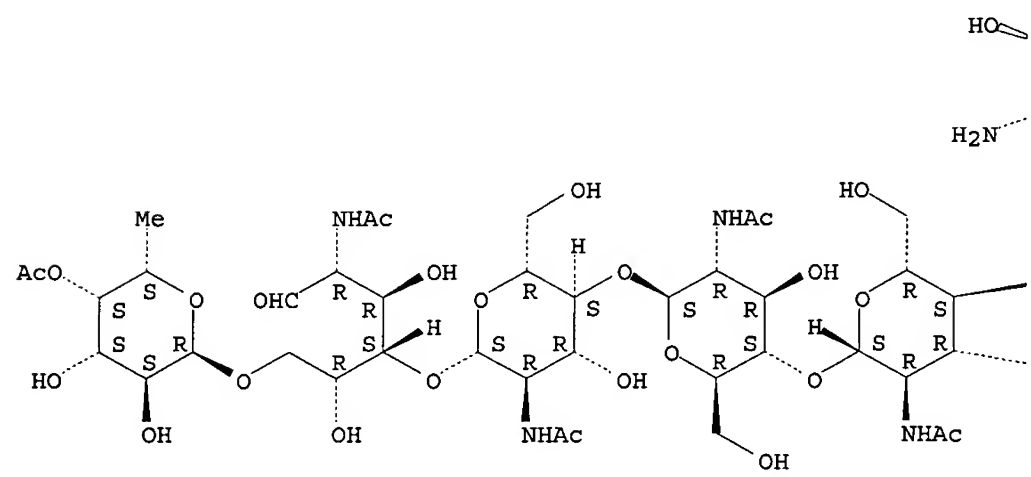
PAGE 1-A

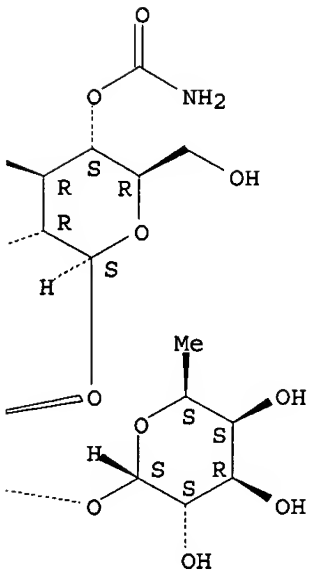




RN 208832-96-6 CAPLUS
CN D-Glucose, O-4-O-acetyl-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.6)-O-[O-2-amino-4-O-(aminocarbonyl)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-(9CI) (CA INDEX NAME)

Absolute stereochemistry.





REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1995:880344 CAPLUS
DOCUMENT NUMBER: 123:310972
TITLE: Tissue targeting of multivalent Lex-terminated N-linked oligosaccharides in mice
AUTHOR(S): Chiu, Ming H.; Thomas, V. Hayden; Stubbs, Hilary J.; Rice, Kevin G.
CORPORATE SOURCE: Coll. Pharmacy, Univ. Michigan, Ann Arbor, MI, 48109-1065, USA
SOURCE: Journal of Biological Chemistry (1995), 270(41), 24024-31
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Bio logy
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The target site for N-linked biantennary and triantennary oligosaccharides contg. multiple terminal Lex determinants was analyzed in mice. N-linked oligosaccharides contg. a single tert-butoxycarbonyl-tyrosine attached to the reducing end were used as synthons for human milk .alpha.-3/4-**fucosyltransferase** to prep. multivalent Lex (Gal.beta.1-4[Fuc.alpha.1-3]GlcNAc) terminated tyrosinamide oligosaccharides. The oligosaccharides were radioiodinated and examd. for their pharmacokinetics and biodistribution in mice. The liver was the major target site in mice at 30 min, which accumulated 18% of the dose for Lex biantennary compared with 6% for a nonfucosylated Gal biantennary. By comparison, Lex- and Gal-terminated triantennary accumulated in the liver with a targeting efficiency of 66 and 59%, resp. The liver targeting of Lex biantennary was partially blocked by co-administration with either galactose or L-fucose whereas Lex triantennary targeting was only reduced by co-administration with galactose. In contrast to these results in mice, in vivo expts. performed in rats established that both Lex and Gal terminated biantennary target the liver with nearly identical efficiency (6-7%). It is concluded that the asialoglycoprotein receptor in mice preferentially recognize Lex biantennary over Gal biantennary, whereas

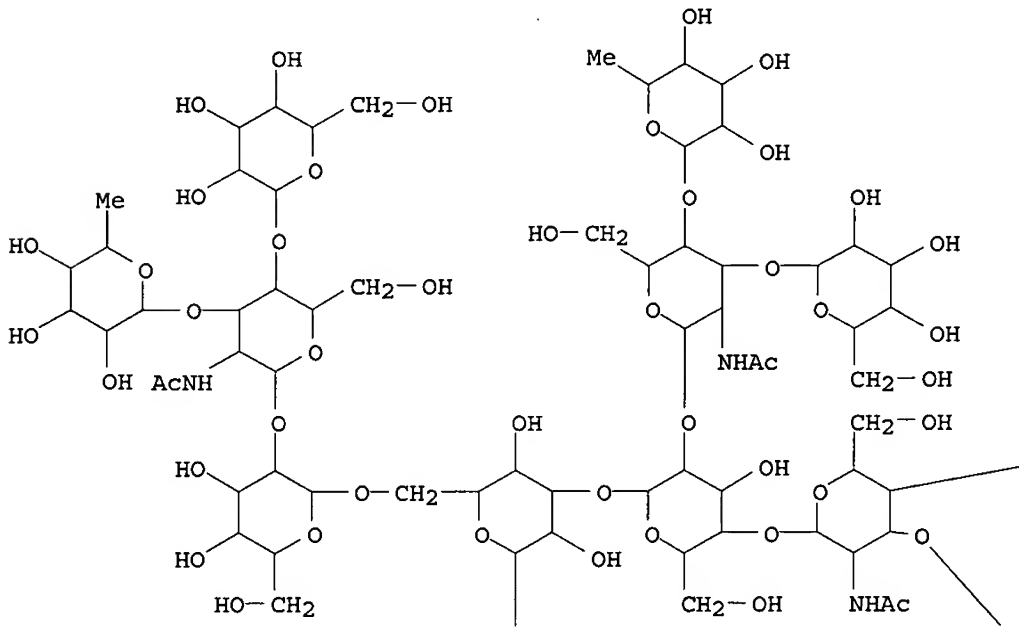
little or no differentiation exists in rats. Thereby, the mouse asialoglycoprotein receptor apparently possesses addnl. binding pockets that accommodate a fucose residue when presented as Lex.

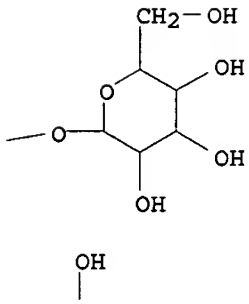
IT **170128-49-1**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(tissue targeting of multivalent Lex-terminated N-linked oligosaccharides in mice)

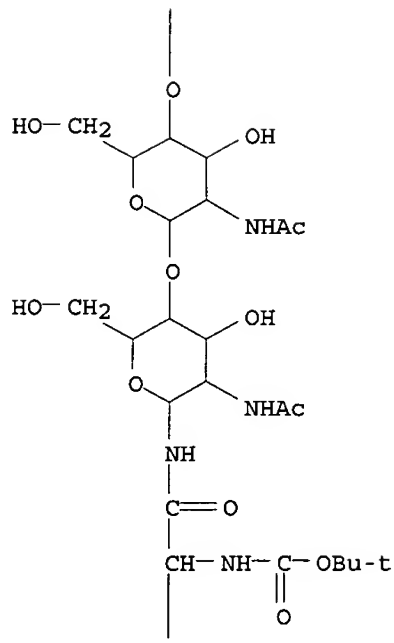
RN 170128-49-1 CAPLUS

CN Carbamic acid, [2-[[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl]amino]-1-[(4-hydroxyphenyl)methyl]-2-oxoethyl]-, 1,1-dimethylethyl ester, (S)- (9CI) (CA INDEX NAME)

PAGE 1-A







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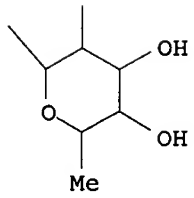
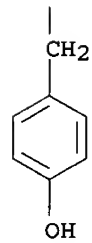


PAGE 3-A

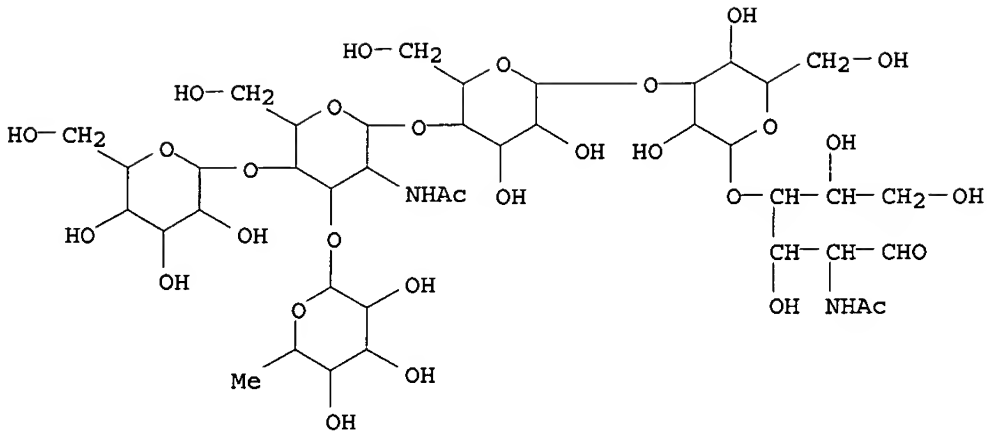


L34 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1979:3952 CAPLUS
DOCUMENT NUMBER: 90:3952
TITLE: Urinary oligosaccharides of fucosidosis. Evidence of the occurrence of X-antigenic determinant in serum-type sugar chains of glycoproteins
AUTHOR(S): Nishigaki, Masanori; Yamashita, Katsuko; Matsuda, Ichiro; Arashima, Shinichiro; Kobata, Akira
CORPORATE SOURCE: Dep. Biochem., Kobe Univ. Sch. Med., Kobe, Japan
SOURCE: Journal of Biochemistry (Tokyo, Japan) (1978), 84(4), 823-34
CODEN: JOBIAO; ISSN: 0021-924X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Urine of a fucosidosis patient contained a large amt. of fucosyl oligosaccharides and fucose-rich glycopeptides. Six major oligosaccharides were purified by a combination of Bio-Gel P-2 and P-4 column chromatogs. and paper chromatog. Structural studies by sequential exoglycosidase digestion and by methylation anal. revealed their structures. The accumulated urinary oligosaccharides contained a mannose residue in a .beta.1-4 linkage with a terminal N-acetylglucosamine at the reducing terminal, indicating that these oligosaccharides originate from asparagine-linked sugar chains. The occurrence of the X-antigenic determinant, a trisaccharide, in the urine of this patient, indicates that the **fucosyltransferase** forming this determinant can use asparagine-linked sugar chains as acceptors.

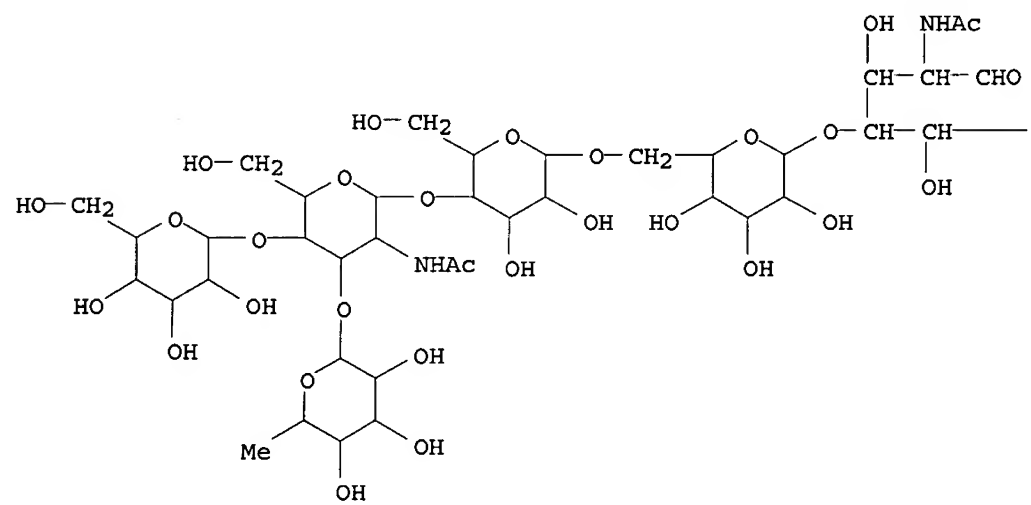
IT **68451-01-4 68451-03-6**
RL: BIOL (Biological study)
(of urine, in fucosidosis)

RN 68451-01-4 CAPLUS
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-.alpha.-L-mannopyranosyl-(1.fwdarw.3)-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)



RN 68451-03-6 CAPLUS
CN D-Glucitol, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-.alpha.-D-mannopyranosyl-(1.fwdarw.6)-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

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L3           1 S L1 SSS FULL
L4             STRUCTURE UPLOADED
L5           2 S L4 SSS SAM
L6         102 S L4 SSS FULL

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L9           0 S L7 AND TETRASCACCHARIDES
L10          1 S L7 AND TETRASACCHARIDES
L11          0 S L7 AND PENTASACCHARIDES
L12          6 S L7 AND PENTASACCHARIDE
L13          4 S L7 AND L-FUCOSE
L14          2 S L7 AND L-FUCOSYL
L15          0 S L7 AND L-GALACTOPYRANOSYL
L16          0 S L7 AND ?GALACTOPYRANOSYL
L17          0 S L7 AND ?GALACTOPYRANOSYL?
L18          0 S L7 AND L-GALACTOPYRANOSYL?
L19          0 S L7 AND O-6-DEOXY-.ALPHA.-L-GALACTOPYRANOSYL-
L20          0 S L7 AND .ALPHA.-L-GALACTOPYRANOSYL-
L21          0 S L7 AND HEXASACCHARIDES
L22          5 S L7 AND HEXASACCHARIDE

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     FILE 'CAPLUS' ENTERED AT 19:12:43 ON 10 JUL 2003
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L28          0 S L25 AND PENTASACCHARIDES
L29          4 S L25 AND PENTASACCHARIDE
L30          0 S L25 AND HEXASACCHARIDE
L31          0 S L25 AND HEXASACCHARIDES
L32          0 S L25 AND HEPTASACCHARIDES
L33          0 S L25 AND OCTASACCHARIDES
L34          7 S L25 AND FUCOSYLTRANSFERASE

=> s l25 and fucosyl transferase
           62 L25
         1171 FUCOSYL
        41910 TRANSFERASE
         5499 TRANSFERASES
        43664 TRANSFERASE
                (TRANSFERASE OR TRANSFERASES)
          105 FUCOSYL TRANSFERASE
                (FUCOSYL(W)TRANSFERASE)
L35         2 L25 AND FUCOSYL TRANSFERASE

=> d l35 1-2 ibib abs hitstr

L35  ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2003 ACS
ACCESSION NUMBER:         1998:368102  CAPLUS
DOCUMENT NUMBER:          129:122807
TITLE:                    Enzymic synthesis of N-linked oligosaccharides
                          terminating in multiple sialyl-Lewisx and
                          GalNAc-Lewisx determinants: clustered glycosides for
                          studying selectin interactions
AUTHOR(S):                Thomas, V. Hayden; Elhalabi, Jordan; Rice, Kevin G.
CORPORATE SOURCE:         College of Pharmacy, Medical Chemistry and
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Pharmaceutics, University of Michigan, Ann Arbor, MI, 48109-1065, USA
SOURCE: Carbohydrate Research (1998), 306(3), 387-400
CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Galactosyltransferase, sialyltransferase, and **fucosyl-transferase** were used to create a panel of complex oligosaccharides that possess multiple terminal sialyl-Lex (NeuAc.alpha.2-3Gal[Fuc.alpha.1-3].beta.1-4GlcNAc) and GalNAc-Lex (GalNAc[Fuc.alpha.1-3].beta.1-4GlcNAc). The enzymic synthesis of tyrosinamide biantennary, triantennary, and tetraantennary N-linked oligosaccharides bearing multiple terminal sialyl-Lex was accomplished on the 0.5 .mu.mol scale and the purified products were characterized by electrospray MS and 1H NMR. Likewise, biantennary and triantennary tyrosinamide oligosaccharides bearing multiple terminal GalNAc-Lex determinants were synthesized and similarly characterized. The transfer kinetics of human milk .alpha.3/4-**fucosyl-transferase** were compared for biantennary oligosaccharide acceptor substrates possessing Gal.beta.1-4GlcNAc, GalNAc.beta.1-4GlcNAc, and NeuAc.alpha.2-3Gal.beta.1-4GlcNAc which established NeuAc.alpha.2-3Gal.beta.1-4GlcNAc as the most efficient acceptor substrate. The resulting complex oligosaccharides were chem. tethered through the tyrosinamide aglycon to the surface of liposomes contg. phosphatidylthioethanol, resulting in the generation of glyco-liposomes probe which will be useful to study relationships between binding affinity and the micro- and macro-clustering of selectin ligand.

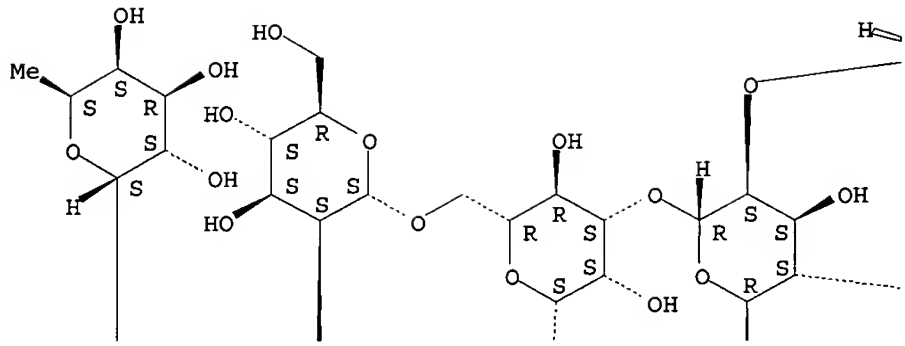
IT **210093-89-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(enzymic synthesis of N-linked oligosaccharides terminating in multiple sialyl-Lewisx and GalNAc-Lewisx determinants as clustered glycosides for studying selectin interactions)

RN 210093-89-3 CAPLUS

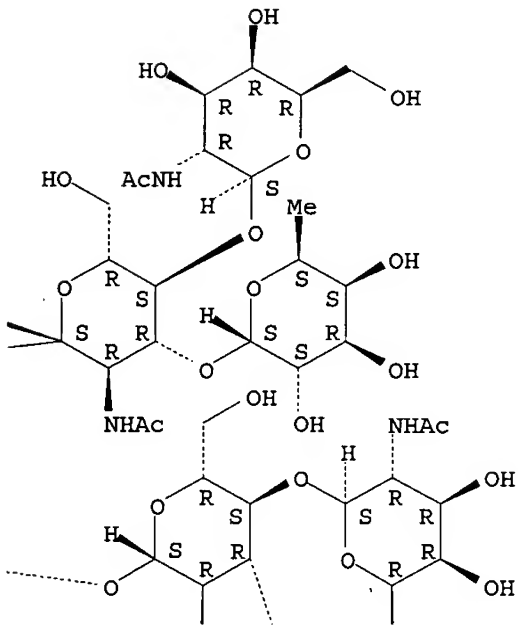
CN L-Threonine, O-[O-2-(acetylamino)-2-deoxy-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-O-[O-2-(acetylamino)-2-deoxy-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)]-O-.alpha.-D-mannopyranosyl-(1.fwdarw.3)-O-[O-2-(acetylamino)-2-deoxy-.beta.-D-galactopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.2)-.alpha.-D-mannopyranosyl-(1.fwdarw.6)]-O-.beta.-D-mannopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl]-N-[(1,1-dimethylethoxy)carbonyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

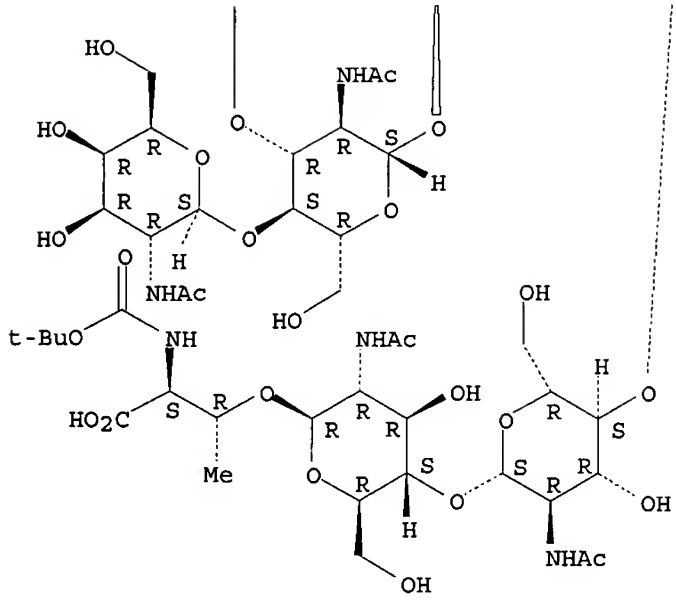
PAGE 1-A



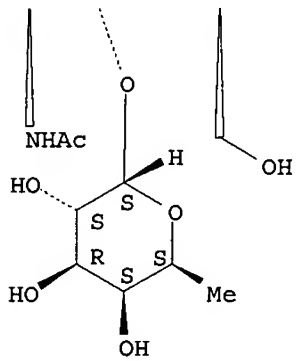
PAGE 1-B



PAGE 2-A



PAGE 2-B



REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L35 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:353191 CAPLUS

DOCUMENT NUMBER: 129:65299

TITLE: Novel Branched Nod Factor Structure Results from .alpha.-(1.fwdarw.3) **Fucosyl Transferase** Activity: The Major Lipo-Chitin Oligosaccharides from Mesorhizobium loti Strain NZP2213 Bear an .alpha.-(1.fwdarw.3) Fucosyl Substituent on a Nonterminal Backbone Residue

AUTHOR(S): Olsthoorn, Maurien M. A.; Lopez-Lara, Isabel M.; Petersen, Bent O.; Bock, Klaus; Haverkamp, Johan; Spaink, Herman P.; Thomas-Oates, Jane E.

CORPORATE SOURCE: Department of Mass Spectrometry Bijvoet Center for Biomolecular Research Faculty of Chemistry, Utrecht University, Utrecht, 3584 CA, Neth.

SOURCE: Biochemistry (1998), 37(25), 9024-9032
CODEN: BICHAW; ISSN: 0006-2960

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Mesorhizobium loti has been described as a microsymbiont of plants of the genus Lotus. Lipo-chitin oligosaccharides (LCOs), or Nod factors, produced by several representative M. loti strains all have similar structures. Using fast-atom-bombardment tandem mass spectrometry and NMR spectroscopy, the authors have now examd. the LCOs from the type strain NZP2213 and obsd. a much greater variety of structures than has been described for the strains of M. loti studied previously. Interestingly, the major LCO was identified a structure that bears a fucose residue .alpha.-1,3-linked to the GlcNAc residue proximal to the nonreducing terminal GlcNAc residue. This is the first time, to the authors' knowledge, that substitution on an internal GlcNAc residue of the LCO backbone has been obsd. This novel LCO structure suggests the presence of a novel fucosyltransferase activity in strain NZP2213. Since the presence of this extra structure does not have the effect of broadening the host range, it is suggested that the modification of the LCOs with a fucose residue linked to a nonterminal GlcNAc residue might provide protection against degrdn. by a particular host plant enzyme (e.g., a chitinase) or alternatively represents adaptation to a particular host-specific receptor. The action of the .alpha.-(1.fwdarw.3) fucosyltransferase seems to reduce significantly the activity of NodS, the methyltransferase involved in the addn. of the N-Me substituent to the nonreducing terminal GlcNAc residue. An addnl. novel LCO structure has been identified having only a GlcNAc2 backbone. This is the first known description of such a minimal LCO structure.

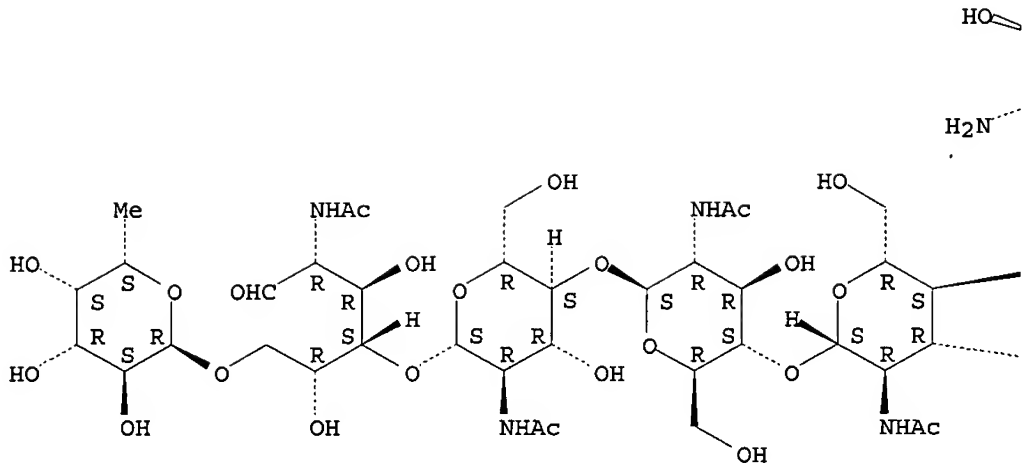
IT **208832-95-5D**, fatty acylated **208832-96-6D**, fatty acylated
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(novel branched lipochitooligosaccharides as Nod factors resulting from .alpha.-(1.fwdarw.3)-fucosyltransferase activity in Mesorhizobium loti)

RN 208832-95-5 CAPLUS

CN D-Glucose, O-2-amino-4-O-(aminocarbonyl)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-[6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.6)]-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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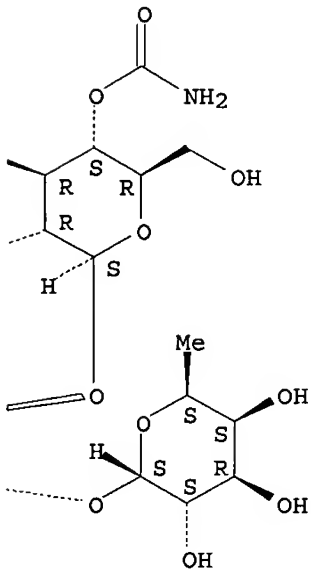

RN 208832-96-6 CAPLUS
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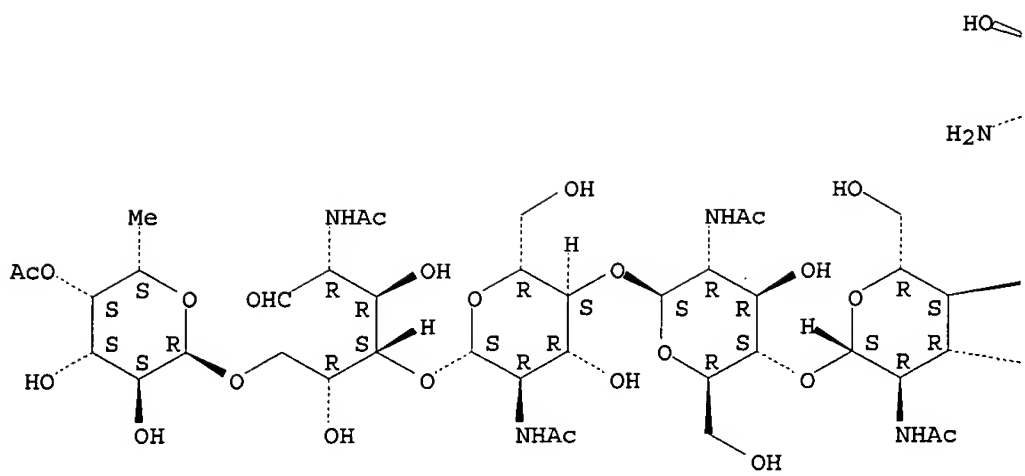
Absolute stereochemistry.

PAGE 1-A



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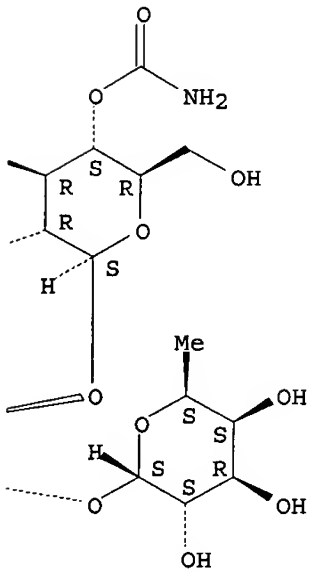

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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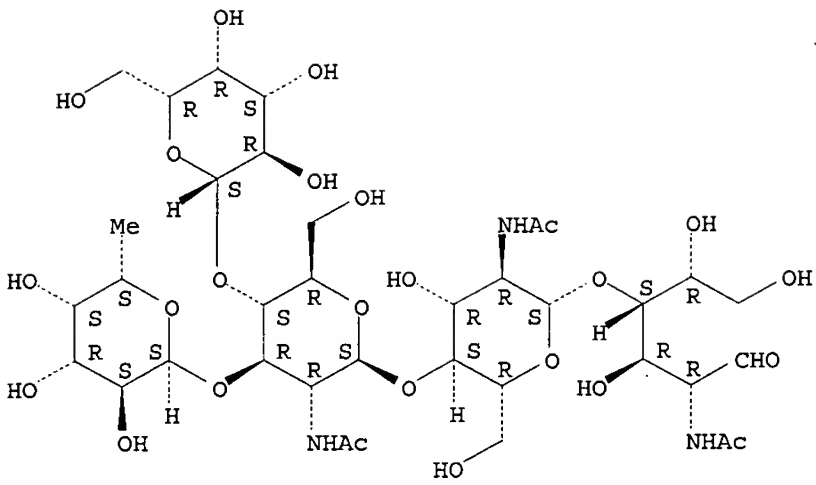
L10 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:150793 CAPLUS
DOCUMENT NUMBER: 130:348917
TITLE: In vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI
AUTHOR(S): Nimtz, Manfred; Grabenhorst, Eckart; Gambert, Ulrike; Costa, Julia; Wray, Victor; Morr, Michael; Thiem, Joachim; Conradt, Harald S.
CORPORATE SOURCE: Gesellschaft fur Biotechnologische Forschung, Braunschweig, 38124, Germany
SOURCE: Glycoconjugate Journal (1998), 15(9), 873-883
CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Transgalactosylation of chitobiose and chitotriose employing .beta.-galactosidase from bovine testes yielded mixts. with .beta.1-3 linked galactose (type I) and .beta.1-4 linked galactose (type II) in a final ratio of 1:1 for the tri- and 1:1.4 for the tetrasaccharide. After 24 h incubations of the two purified oligosaccharide mixts. with large amts. (20-fold increase compared with std. conditions) of human .alpha.1, 3/4-fucosyltransferase III (FucT III), the type I tri-/**tetrasaccharides** were completely converted to the Lewisa structure, whereas approx. 10% fucosylation of the type II isomers to the Lewisx oligosaccharides was obsd. in long-term incubations. Employing large amts. of human .alpha.1, 3-fucosyltransferase VI (FucT VI), the type I trisaccharide substrate was exclusively fucosylated at the proximal 0-4 substituted N-acetylglucosamine (GlcNAc) (20%) whereas almost all of the type II isomers was converted to the corresponding Lewisx product. 45% Of the type I tetrasaccharide was fucosylated at the second GlcNAc solely by FucT VI. The type II isomer was almost completely .alpha.1-3 fucosylated to yield the Lewisx deriv. with traces of a structure that contained an addnl. fucose at the reducing GlcNAc. The results obtained in the present study employing high amts. of enzyme confirmed our previous results that FucT III acts preponderantly as a .alpha.1-4 fucosyltransferase onto GlcNAc in vitro. Human FucT VI attaches fucose exclusively in an .alpha.1-3 linkage to 4-substituted GlcNAc in vitro and does not modify any 3-substituted GlcNAc to yield Lewisa oligosaccharides. With 8-methoxycarbonyl-octyl glycoside acceptors used under std. conditions, FucT III acts exclusively on the type I and FucT VI only on the type II deriv. With lacto-N-tetraose, lacto-N-fucopentraose I, or LS-tetrasaccharide as substrates, FucT III modified the 3-substituted GlcNAc and the reducing glucose; FucT VI recognized only lacto-N-neotetraose as a substrate.

IT **225089-62-3**
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(in vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI)

RN 225089-62-3 CAPLUS
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:150793 CAPLUS
DOCUMENT NUMBER: 130:348917
TITLE: In vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI
AUTHOR(S): Nimtz, Manfred; Grabenhorst, Eckart; Gambert, Ulrike; Costa, Julia; Wray, Victor; Morr, Michael; Thiem, Joachim; Conradt, Harald S.
CORPORATE SOURCE: Gesellschaft fur Biotechnologische Forschung, Braunschweig, 38124, Germany
SOURCE: Glycoconjugate Journal (1998), 15(9), 873-883
CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER: Kluwer Academic Publishers
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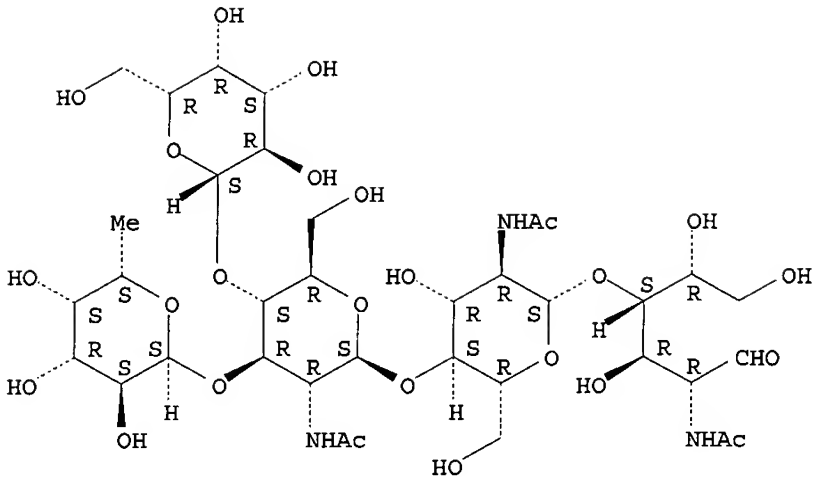
IT **225089-62-3**
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(in vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI)

RN 225089-62-3 CAPLUS
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

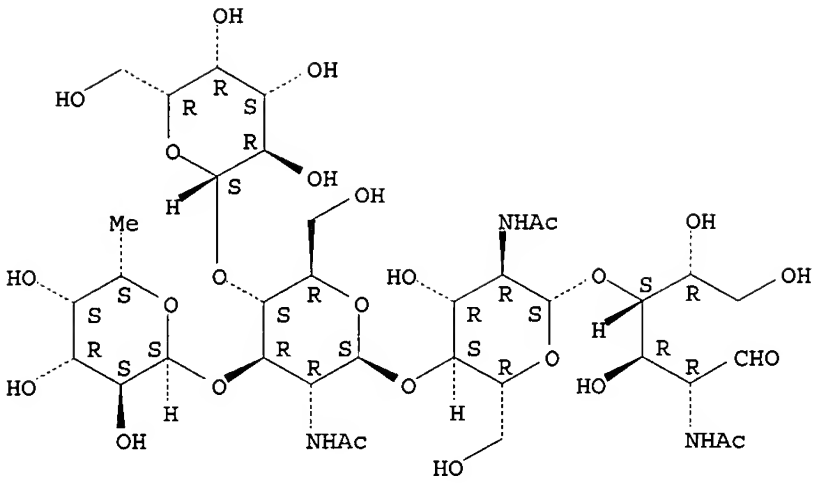
L27 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:150793 CAPLUS
DOCUMENT NUMBER: 130:348917
TITLE: In vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI
AUTHOR(S): Nimtz, Manfred; Grabenhorst, Eckart; Gambert, Ulrike; Costa, Julia; Wray, Victor; Morr, Michael; Thiem, Joachim; Conradt, Harald S.
CORPORATE SOURCE: Gesellschaft fur Biotechnologische Forschung, Braunschweig, 38124, Germany
SOURCE: Glycoconjugate Journal (1998), 15(9), 873-883
CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Transgalactosylation of chitobiose and chitotriose employing .beta.-galactosidase from bovine testes yielded mixts. with .beta.1-3 linked galactose (type I) and .beta.1-4 linked galactose (type II) in a final ratio of 1:1 for the tri- and 1:1.4 for the tetrasaccharide. After 24 h incubations of the two purified oligosaccharide mixts. with large amts. (20-fold increase compared with std. conditions) of human .alpha.1, 3/4-fucosyltransferase III (FucT III), the type I tri-/**tetrasaccharides** were completely converted to the Lewisa structure, whereas approx. 10% fucosylation of the type II isomers to the Lewisx oligosaccharides was obsd. in long-term incubations. Employing large amts. of human .alpha.1, 3-fucosyltransferase VI (FucT VI), the type I trisaccharide substrate was exclusively fucosylated at the proximal 0-4 substituted N-acetylglucosamine (GlcNAc) (20%) whereas almost all of the type II isomers was converted to the corresponding Lewisx product. 45% Of the type I tetrasaccharide was fucosylated at the second GlcNAc solely by FucT VI. The type II isomer was almost completely .alpha.1-3 fucosylated to yield the Lewisx deriv. with traces of a structure that contained an addnl. fucose at the reducing GlcNAc. The results obtained in the present study employing high amts. of enzyme confirmed our previous results that FucT III acts preponderantly as a .alpha.1-4 fucosyltransferase onto GlcNAc in vitro. Human FucT VI attaches fucose exclusively in an .alpha.1-3 linkage to 4-substituted GlcNAc in vitro and does not modify any 3-substituted GlcNAc to yield Lewisa oligosaccharides. With 8-methoxycarbonyl-octyl glycoside acceptors used under std. conditions, FucT III acts exclusively on the type I and FucT VI only on the type II deriv. With lacto-N-tetraose, lacto-N-fucopentraose I, or LS-tetrasaccharide as substrates, FucT III modified the 3-substituted GlcNAc and the reducing glucose; FucT VI recognized only lacto-N-neotetraose as a substrate.

IT **225089-62-3**
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(in vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI)

RN 225089-62-3 CAPLUS
CN D-Glucose, 0-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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L27 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:150793 CAPLUS
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AUTHOR(S): Nimtz, Manfred; Grabenhorst, Eckart; Gambert, Ulrike; Costa, Julia; Wray, Victor; Morr, Michael; Thiem, Joachim; Conradt, Harald S.
CORPORATE SOURCE: Gesellschaft fur Biotechnologische Forschung, Braunschweig, 38124, Germany
SOURCE: Glycoconjugate Journal (1998), 15(9), 873-883
CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER: Kluwer Academic Publishers
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LANGUAGE: English

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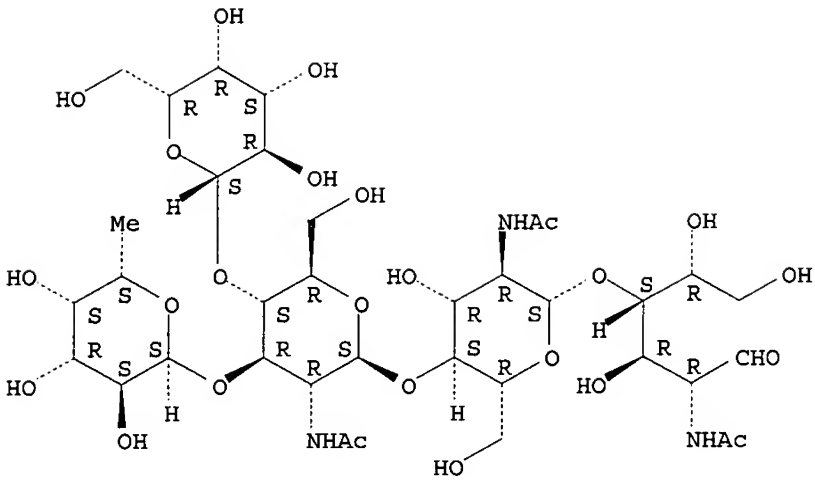
IT **225089-62-3**
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(in vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI)

RN 225089-62-3 CAPLUS
CN D-Glucose, 0-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

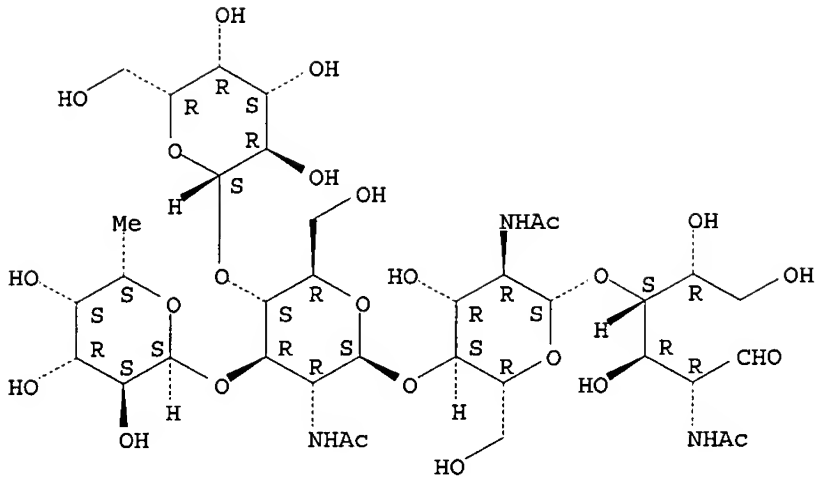
L27 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1999:150793 CAPLUS
DOCUMENT NUMBER: 130:348917
TITLE: In vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI
AUTHOR(S): Nimtz, Manfred; Grabenhorst, Eckart; Gambert, Ulrike; Costa, Julia; Wray, Victor; Morr, Michael; Thiem, Joachim; Conradt, Harald S.
CORPORATE SOURCE: Gesellschaft fur Biotechnologische Forschung, Braunschweig, 38124, Germany
SOURCE: Glycoconjugate Journal (1998), 15(9), 873-883
CODEN: GLJOEW; ISSN: 0282-0080
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Transgalactosylation of chitobiose and chitotriose employing .beta.-galactosidase from bovine testes yielded mixts. with .beta.1-3 linked galactose (type I) and .beta.1-4 linked galactose (type II) in a final ratio of 1:1 for the tri- and 1:1.4 for the tetrasaccharide. After 24 h incubations of the two purified oligosaccharide mixts. with large amts. (20-fold increase compared with std. conditions) of human .alpha.1, 3/4-fucosyltransferase III (FucT III), the type I tri-/**tetrasaccharides** were completely converted to the Lewisa structure, whereas approx. 10% fucosylation of the type II isomers to the Lewisx oligosaccharides was obsd. in long-term incubations. Employing large amts. of human .alpha.1, 3-fucosyltransferase VI (FucT VI), the type I trisaccharide substrate was exclusively fucosylated at the proximal 0-4 substituted N-acetylglucosamine (GlcNAc) (20%) whereas almost all of the type II isomers was converted to the corresponding Lewisx product. 45% Of the type I tetrasaccharide was fucosylated at the second GlcNAc solely by FucT VI. The type II isomer was almost completely .alpha.1-3 fucosylated to yield the Lewisx deriv. with traces of a structure that contained an addnl. fucose at the reducing GlcNAc. The results obtained in the present study employing high amts. of enzyme confirmed our previous results that FucT III acts preponderantly as a .alpha.1-4 fucosyltransferase onto GlcNAc in vitro. Human FucT VI attaches fucose exclusively in an .alpha.1-3 linkage to 4-substituted GlcNAc in vitro and does not modify any 3-substituted GlcNAc to yield Lewisa oligosaccharides. With 8-methoxycarbonyl-octyl glycoside acceptors used under std. conditions, FucT III acts exclusively on the type I and FucT VI only on the type II deriv. With lacto-N-tetraose, lacto-N-fucopentraose I, or LS-tetrasaccharide as substrates, FucT III modified the 3-substituted GlcNAc and the reducing glucose; FucT VI recognized only lacto-N-neotetraose as a substrate.

IT **225089-62-3**
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(in vitro .alpha.1-3 or .alpha.1-4 fucosylation of type I and II oligosaccharides with secreted forms of recombinant human fucosyltransferases III and VI)

RN 225089-62-3 CAPLUS
CN D-Glucose, O-6-deoxy-.alpha.-L-galactopyranosyl-(1.fwdarw.3)-O-[.beta.-D-galactopyranosyl-(1.fwdarw.4)]-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-O-2-(acetylamino)-2-deoxy-.beta.-D-glucopyranosyl-(1.fwdarw.4)-2-(acetylamino)-2-deoxy- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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